

Byron 2

Initiating Events

G**Significance:** Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)G**Significance:** Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)

Mitigating Systems

G**Significance:** Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL SWITCH

Green. The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)**Significance:** SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences

using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)



Significance: Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)



Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings. Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2000012\(pdf\)](#)

Inspection Report# : [2001010\(pdf\)](#)



Significance: Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)

Barrier Integrity



Significance: Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)

G

Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)

G

Significance: Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)

G

Significance: Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)**Significance: SL-IV** Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2001004\(pdf\)](#)Inspection Report# : [2000016\(pdf\)](#)

G

Significance: Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance.

Inspection Report# : [2000010\(pdf\)](#)

Public Radiation Safety

Physical Protection



Significance: Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)



Significance: May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-

2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Last modified : April 01, 2002

Byron 2

Initiating Events



Significance: Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)



Significance: Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)

Mitigating Systems



Significance: Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL SWITCH

Green. The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences

using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)



Significance: Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)



Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings. Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2000012\(pdf\)](#)

Inspection Report# : [2001010\(pdf\)](#)



Significance: Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)

Barrier Integrity



Significance: Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)



Significance: Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)



Significance: Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance.

Inspection Report# : [2000010\(pdf\)](#)

G

Significance: Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)**Significance: SL-IV** Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2001004\(pdf\)](#)Inspection Report# : [2000016\(pdf\)](#)

Public Radiation Safety

Physical Protection



Significance: Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)



Significance: May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-

2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Last modified : April 01, 2002

Byron 2

Initiating Events



Significance: Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)



Significance: Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)

Mitigating Systems

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings. Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2000012\(pdf\)](#)

Inspection Report# : [2001010\(pdf\)](#)



Significance: Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)



Significance: Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL

SWITCH

Green. The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)



Significance: Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)



Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)

Barrier Integrity



Significance: Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)

G

Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)

G

Significance: Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)

G

Significance: Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance.

Inspection Report# : [2000010\(pdf\)](#)

G

Significance: Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)**Significance: SL-IV** Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2000016\(pdf\)](#)Inspection Report# : [2001004\(pdf\)](#)

Public Radiation Safety

Physical Protection



Significance: Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)



Significance: May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-

2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Last modified : March 29, 2002

Byron 2

Initiating Events



Significance: Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)



Significance: Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)

Mitigating Systems

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings. Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2001010\(pdf\)](#)

Inspection Report# : [2000012\(pdf\)](#)



Significance: Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)



Significance: Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL

SWITCH

Green. The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)



Significance: Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)



Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)

Barrier Integrity



Significance: Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)

G

Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)

G

Significance: Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)

G

Significance: Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Significance: SL-IV Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2000016\(pdf\)](#)Inspection Report# : [2001004\(pdf\)](#)

G

Significance: Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance.

Inspection Report# : [2000010\(pdf\)](#)

G

Significance: Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)

Public Radiation Safety

Physical Protection



Significance: Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)



Significance: May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action

program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Last modified : March 28, 2002

Byron 2

Initiating Events



Significance: Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)



Significance: Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)

Mitigating Systems



Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings. Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2001010\(pdf\)](#)

Inspection Report# : [2000012\(pdf\)](#)



Significance: Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR

DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)



Significance: Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL SWITCH

Green. The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)



Significance: Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)

Barrier Integrity

Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)



Significance: Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)



Significance: Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)**Significance: SL-IV** Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2001004\(pdf\)](#)Inspection Report# : [2000016\(pdf\)](#)

G

Significance: Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance.

Inspection Report# : [2000010\(pdf\)](#)

Public Radiation Safety

Physical Protection



Significance: Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)



Significance: May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action

program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Last modified : March 28, 2002

Byron 2

Initiating Events



Significance: Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)



Significance: Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)

Mitigating Systems



Significance: Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)



Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings. Furthermore, in March, May and June 1999, the individual deliberately

failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2001010\(pdf\)](#)

Inspection Report# : [2000012\(pdf\)](#)

G

Significance: Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)

G

Significance: Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL SWITCH

Green. The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)

Barrier Integrity

G

Significance: Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)



Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)



Significance: Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)**Significance: SL-IV** Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2001004\(pdf\)](#)Inspection Report# : [2000016\(pdf\)](#)

G

Significance: Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance.

Inspection Report# : [2000010\(pdf\)](#)

Public Radiation Safety

Physical Protection



Significance: Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)



Significance: May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action

program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Last modified : March 27, 2002

Byron 2

Initiating Events

G**Significance:** Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)G**Significance:** Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)

Mitigating Systems

G**Significance:** Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)G**Significance:** Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)G**Significance:** Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL

SWITCH

Green. The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings. Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2001010\(pdf\)](#)

Inspection Report# : [2000012\(pdf\)](#)



Significance: Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)

Barrier Integrity



Significance: Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)



Significance: Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)



Significance: Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)



Significance: Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited

Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety



Significance: Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)

Significance: SL-IV Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2000016\(pdf\)](#)

Inspection Report# : [2001004\(pdf\)](#)



Significance: Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance.

Inspection Report# : [2000010\(pdf\)](#)

Public Radiation Safety

Physical Protection



Significance: Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)



Significance: May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program.

Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports. Inspection Report# : [2000020\(pdf\)](#)

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)

Last modified : March 26, 2002

Byron 2

Initiating Events



Significance: Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)



Significance: Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)

Mitigating Systems

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)



Significance: Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)

G

Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)**Significance:** SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings. Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2001010\(pdf\)](#)Inspection Report# : [2000012\(pdf\)](#)

G

Significance: Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)

Barrier Integrity

G

Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)

G

Significance: Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)

G

Significance: Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)

G

Significance: Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)

G

Significance: Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)

Significance: SL-IV Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2000016\(pdf\)](#)

Inspection Report# : [2001004\(pdf\)](#)



Significance: Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance.

Inspection Report# : [2000010\(pdf\)](#)

Public Radiation Safety

Physical Protection



Significance: Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)



Significance: May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Last modified : March 01, 2002

Byron 2

Initiating Events



Significance: Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)



Significance: Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)

Mitigating Systems



Significance: Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL SWITCH

The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding

Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)



Significance: Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)



Significance: Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings. Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2000012\(pdf\)](#)

Inspection Report# : [2001010\(pdf\)](#)



Significance: Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)

Barrier Integrity



Significance: Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)



Significance: Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)



Significance: Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)



Significance: Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour,"

Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Jan 12, 2001
Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)

Significance: SL-IV Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2001004\(pdf\)](#)

Inspection Report# : [2000016\(pdf\)](#)

Significance:  Jun 16, 2000
Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance

Inspection Report# : [2000010\(pdf\)](#)

Public Radiation Safety

Physical Protection



Significance: Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)



Significance: May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical

integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.
Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Last modified : July 22, 2002

Byron 2

Initiating Events

Significance:  Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)

Significance:  Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)

Mitigating Systems

Significance: SL-IV Jun 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE 50.59 EVALUATION RESULTED IN THE CCW SYSTEM NOT MEETING SINGLE FAILURE CRITERIA FOR A THERMAL BARRIER HEAT EXCHANGER RUPTURE EVENT

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the Updated Final Safety Analysis Report (UFSAR) that involved an unreviewed safety question and for which prior NRC approval was not obtained per the requirements of 10 CFR 50.59 in effect at the time. Specifically, the licensee changed the UFSAR and failed to adequately evaluate: 1) an elimination of performance requirements for valve 1/2CC-9438 associated with isolation of a loss of coolant accident following a thermal barrier heat exchanger rupture; 2) a decrease in the number, from two to one, of valves in the component cooling water return line that were relied upon to meet the performance requirements of General Design Criteria 44 and 54, and; 3) a substitution of operator manual actions for a remote manual valve closure. This change to the facility, as described in the UFSAR, created the possibility for a new accident not previously evaluated in the UFSAR. Because the Significance Determination Process (SDP) is not designed to assess the significance of violations that potentially impact or impede the regulatory process,

this issue was dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. However, the results of the violation, that is, the elimination of performance requirements for one of two valves relied upon to isolate a loss of coolant accident involving a thermal barrier heat exchanger rupture, were assessed using the SDP. The severity level of the violation was then based upon the SDP assessment for the results of the violation. The results of the violation were considered to have more than minor safety significance, in that, the results of the violation had a credible impact on safety by affecting the operability, availability, reliability, or functioning of the component cooling water system. However, the results of the violation did not cause a loss of function of the component cooling water system per the guidance of Generic Letter 91-18, "Resolution of Degraded and Non-Conforming Conditions." Therefore, the results of the violation were determined to be of very low safety significance, a Green finding, and the violation of 10 CFR 50.59 was classified as a Severity Level IV violation. Because this non-willful violation was non-repetitive, and was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with the NRC Enforcement Policy.

Inspection Report# : [2002005\(pdf\)](#)



Significance: Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL SWITCH

The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The

regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)

Significance:  Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)

Significance:  Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps. As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings.

Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2000012\(pdf\)](#)

Inspection Report# : [2001010\(pdf\)](#)

Significance:  Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited

violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)

Barrier Integrity

Significance:  Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance:  Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance.

Inspection Report# : [2001014\(pdf\)](#)

Significance:  Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)

Significance:  Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)

Significance:  Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)

Significance: SL-IV Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2000016\(pdf\)](#)

Inspection Report# : [2001004\(pdf\)](#)

Significance:  Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance

Inspection Report# : [2000010\(pdf\)](#)

Public Radiation Safety

Physical Protection

Significance:  Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)

Significance:  May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of

significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)



Significance: Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Last modified : August 29, 2002

Byron 2

Initiating Events

Significance:  Oct 03, 2002

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO MANAGE SHUTDOWN RISK ASSOCIATED WITH SWITCHYARD ACTIVITIES DURING REDUCED RCS INVENTORY

A finding of very low safety significance was identified through a self-revealing event. Specifically, the licensee failed to assess and manage the increase in risk associated switchyard maintenance activities that commenced prior to restoring reactor coolant system (RCS) inventory to greater than 5 percent pressurizer level as required by the licensee's preestablished contingency plan. This was identified when the outage manager contacted the switchyard coordinator to inform him that the prerequisite regarding RCS inventory was about to be met, at which time the outage manager was informed that work already commenced. The primary cause of this finding was related to the cross-cutting area of Human Performance. Although administrative controls were in place to prevent switchyard work the RCS was at reduced inventory, the controls were not implemented. The finding was more than minor because it increased the likelihood of those events that upset plant stability and challenge a critical safety function, specifically electric power control, during shutdown operations. The finding was of very low safety significance because both emergency diesel generators were subsequently determined to be available; therefore, providing sufficient redundancy such that the licensee's ability to cope with a loss of offsite power was not degraded during the switchyard activities. This was determined to be a Non-Cited Violation of 10 CFR 50.65 (a)(4).

Inspection Report# : [2002006\(pdf\)](#)

Significance:  Apr 22, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN A STEAM GENERATOR LEVEL TRANSIENT

During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit.

Inspection Report# : [2001009\(pdf\)](#)

Significance:  Sep 30, 2000

Identified By: NRC

Item Type: FIN Finding

INNAPROPRIATE OPERATOR ACTIONS RESULT IN UNCOMPLICATED REACTOR TRIP

Operator actions in response to a failed feedwater regulating valve controller were inappropriate and resulted in making the feedwater regulating valve controller inoperable and an uncomplicated reactor trip. The risk significance of this issue was very low because all of the mitigation systems were operable and functioned properly and barrier integrity was not challenged.

Inspection Report# : [2000014\(pdf\)](#)

Mitigating Systems

Significance: SL-IV Jun 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE 50.59 EVALUATION RESULTED IN THE CCW SYSTEM NOT MEETING SINGLE FAILURE CRITERIA FOR A THERMAL BARRIER HEAT EXCHANGER RUPTURE EVENT

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the Updated Final Safety Analysis Report (UFSAR) that involved an unreviewed safety question and for which prior NRC approval was not obtained per the requirements of 10 CFR 50.59 in effect at the time. Specifically, the licensee changed the UFSAR and failed to adequately evaluate: 1) an elimination of performance requirements for valve 1/2CC-9438 associated with isolation of a loss of coolant accident following a thermal barrier heat exchanger rupture; 2) a decrease in the number, from two to one, of valves in the component cooling water return line that were relied upon to meet the performance requirements of General Design Criteria 44 and 54, and; 3) a substitution of operator manual actions for a remote manual valve closure. This change to the facility, as described in the UFSAR, created the possibility for a new accident not previously evaluated in the UFSAR. Because the Significance Determination Process (SDP) is not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue was dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. However, the results of the violation, that is, the elimination of performance requirements for one of two valves relied upon to isolate a loss of coolant accident involving a thermal barrier heat exchanger rupture, were assessed using the SDP. The severity level of the violation was then based upon the SDP assessment for the results of the violation. The results of the violation were considered to have more than minor safety significance, in that, the results of the violation had a credible impact on safety by affecting the operability, availability, reliability, or functioning of the component cooling water system. However, the results of the violation did not cause a loss of function of the component cooling water system per the guidance of Generic Letter 91-18, "Resolution of Degraded and Non-Conforming Conditions." Therefore, the results of the violation were determined to be of very low safety significance, a Green finding, and the violation of 10 CFR 50.59 was classified as a Severity Level IV violation. Because this non-willful violation was non-repetitive, and was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with the NRC Enforcement Policy.

Inspection Report# : [2002005\(pdf\)](#)



Significance: Feb 11, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING FOLLOWING THE REPLACEMENT OF THE 1B AUXILIARY FEEDWATER PUMP CONTROL SWITCH

The inspectors identified that following the replacement of the 1B auxiliary feedwater pump control switch, the licensee's post maintenance test failed to demonstrate that the pump auto-start feature would perform satisfactorily in service. This finding was determined to be of very low safety significance, because the failure did not result in an actual loss of the safety function of the auxiliary feedwater system. A Non-Cited Violation of 10 CFR 50 Appendix B, Criteria XI, for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2002002\(pdf\)](#)

Significance: SL-IV Dec 29, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE DIESEL GENERATOR VENTILATION SYSTEM THAT RESULTED IN AN UNREVIEWED SAFETY QUESTION

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the diesel generator (DG) ventilation system that involved an unreviewed safety question and failed to obtain prior NRC approval in accordance with the 10 CFR 50.59 requirements in effect at the time. Specifically, the licensee failed to adequately evaluate the defeating of the automatic actuation of the DG ventilation system and replacing it with operator manual actions to recover the system's function. This change increased the probability of occurrence of a

malfunction of equipment important to safety previously evaluated in the safety analysis report. Because the SDP was not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue is being dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. The result of this violation (when a DG was inoperable due to the implementation of the procedure) was assessed significance through the SDP and the severity level of the violation was based on the significance determination. This issue was considered to have more than minor significance, in that, it had a credible impact on safety by affecting the operability, availability, reliability, or function of the DGs. Because the licensee caused one DG to be inoperable for about 21 days which was longer than the outage time allowed by Technical Specification, the inspectors performed a bounding Phase II SDP analysis. The inspectors evaluated the loss of offsite power and a loss of offsite power coincident with a loss of one division of AC power accident sequences using the following assumptions: (1) minimal credit for operator recovery actions, (2) the DG was inoperable at the start of the event; and (3) the exposure time for this type of failure occurred for an entire year instead of just during the winters months. The result of these analyses determined that this issue was of very low safety significance (i.e., Green). The regional senior reactor analyst also performed a qualitative Phase III SDP analysis and determined that external conditions would not be sufficient to increase the safety significance of the issue. Therefore, this issue was classified as a Severity Level IV violation of 10 CFR 50.59. However, because this issue is of very low safety significance and it was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : [2001016\(pdf\)](#)

Significance:  Oct 03, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

ADEQUATE ACCEPTANCE CRITERIA FOR GENERIC LETTER 89-13 HEAT EXCHANGER INSPECTIONS

The inspectors identified a finding of very low safety significance regarding inadequate acceptance criteria for the licensee's Generic Letter 89-13 heat exchanger inspections. The inspectors identified this issue during observations and review of the licensee's inspection of an auxiliary feedwater system heat exchanger. The finding was more than minor because it adversely affected the licensee's ability to ensure that safety-related heat exchangers would be available, reliable, and capable of responding to initiating events to prevent undesirable consequences. The finding was very low safety significance because the as-found and as-left conditions of the heat exchangers did not reveal any actual concerns with the operability of the heat exchangers. This was determined to be a Non-Cited Violation of 10 CFR 50 Appendix B, Criteria V.

Inspection Report# : [2002006\(pdf\)](#)

Significance:  Apr 14, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW MAINTENANCE WORK INSTRUCTION RESULTED IN DECAY HEAT REMOVAL NEAR MISS.

On April 16, 2001, a crew of three contract workers disassembled a feedwater system tempering line check valve from the wrong train, contrary to the work instructions.

Inspection Report# : [2001008\(pdf\)](#)

Significance:  Mar 31, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ACCOMPLISH POST MAINTENANCE TESTING REQUIREMENTS AFTER INSTALLING STAINLESS STEEL FLEXIBLE HOSES ON THE U1&U2 CV PUMPS

The inspectors identified a Non-Cited Violation for the licensee's failure to accomplish appropriate post-modification testing requirements after installing stainless steel flexible hoses on the Unit 1 and Unit 2 centrifugal charging pumps.

As a result, several of the hoses were improperly installed. The finding was of very low safety significance because there was no immediate failure concern for the hoses in question and the licensee entered this finding into its corrective action program.

Inspection Report# : [2001006\(pdf\)](#)

Significance: SL-IV Aug 19, 2000

Identified By: NRC

Item Type: VIO Violation

DISPOSITION OF URI 50-454/455-99020-02(DRP) EA 00-103, NOV LETTER 7/21/2000

In January, May, July, and November 1999, a mechanical maintenance individual deliberately failed to perform the visual inspection of 15 portable fire extinguishers at monthly intervals in the Turbine and Auxiliary Buildings.

Furthermore, in March, May and June 1999, the individual deliberately failed to perform the visual inspection of 13 fire hose stations at monthly intervals in the turbine and Auxiliary Buildings.

Inspection Report# : [2000012\(pdf\)](#)

Inspection Report# : [2001010\(pdf\)](#)

Significance:  Jul 25, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY MONITOR THE FUNCTION OF THE VA VENTILATION DAMPERS FOR THE AUXILIARY FEEDWATER MOTOR DRIVEN PUMPS WITHIN THE MAINTENANCE RULE

The inspectors identified that the licensee failed to appropriately monitor the ventilation supply dampers for the motor driven auxiliary feedwater (AF) pumps within the scope of the licensee's maintenance rule program. A noncited violation was issued. The damper failures reviewed did not result in a loss of safety function for the motor driven AF pumps and with the diesel driven AF pumps still available, this issue was determined to be of very low safety significance.

Inspection Report# : [2000009\(pdf\)](#)

Barrier Integrity

Significance:  Nov 15, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE POST MAINTENANCE TESTING RESULTED IN AN INOPERABLE CONTAINMENT ISOLATION INSTRUMENTATION

The inspectors identified that the licensee's post maintenance test failed to demonstrate that the Unit 2 containment radiation monitor 2AR11J output relay would perform satisfactory in service. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XI for the failure to perform an adequate post maintenance test was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance:  Nov 12, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

OPERATOR ERRORS RESULT IN VIOLATION OF CONTAINMENT ISOLATION VALVE TECHNICAL SPECIFICATION

A Non-Cited Violation of Technical Specification 3.6.3 for the operator's failure to isolate two inoperable containment

penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment, however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance. Inspection Report# : [2001014\(pdf\)](#)

 **Significance:** Aug 13, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

REACTOR POWER LIMIT EXCEEDED DUE TO IMPROPERLY CALCULATED FEEDWATER MASS FLOWRATE UTILIZED IN REACTOR POWER CALORIMETRIC.

The licensee identified two discrepancies with the feedwater flow calibration constants utilized in the calculation of feedwater mass flowrate and reactor thermal power level, which affected the accuracy of the thermal power calorimetric calculation in a non-conservative direction. Because of these discrepancies, the licensee had operated both Unit 1 and Unit 2 in excess of 100 percent power as defined in their respective Facility Operating Licenses between May 2000 and May 2001. This is a violation of the operating licenses.

Inspection Report# : [2001010\(pdf\)](#)

 **Significance:** Jul 28, 2001

Identified By: Licensee

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN AN INOPERABLE CONTROL ROOM VENTILATION FILTRATION SYSTEM.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide, Revision 2, February 1978, specifies authorities and responsibilities for safe operations and shutdown as an example of an administrative procedure. Nuclear Station Procedure OP-AA-101-102, "Roles and Responsibilities of On-Shift Personnel," Revision 3, Step 4.4.5, states that the unit supervisors are to ensure operations are conducted within the bounds of the TS in accordance with the Operations Standards and approved procedures. On July 18, 2001, during a maintenance activity that rendered the Unit 0B control room ventilation filtration actuation instrumentation inoperable, operators failed to correctly align the redundant control room ventilation filtration system train in the normal mode or emergency mode as required by Unit 0 Byron Operating Limits Procedure 3.7, "LCOAR [Limiting Condition for Operation Action Requirement], Control Room Ventilation Filtration System Actuation Instrumentation TS LCO [Limiting Condition for Operation] 3.3.7," Revision 2, Step A.

Inspection Report# : [2001010\(pdf\)](#)

 **Significance:** Apr 28, 2001

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE RESULTED IN UNIT 2 REACTOR POWER OPERATION IN EXCESS OF ITS LICENSED THERMAL POWER LIMIT.

The inspectors identified a Non-Cited Violation of Technical Specification (TS) 5.4.1.a for the operators' failure to follow Unit 2 Byron General Operating Procedure 100-3T5, "Load Change Instruction Sheet for Power Increases less than 15 percent in 1 Hour," Revision 4. Operators incorrectly initiated a turbine generator power increase (a change directly affecting reactivity) and did not appropriately monitor Unit 2 plant parameters for the expected response during the increase in power. This resulted in Unit 2 reactor power operation in excess of its licensed thermal power limit. This finding had a credible impact on safety because the inappropriate operator actions associated with this event could have resulted in operation outside the safety analysis if reactor power exceeded 102 percent rated thermal power. Although

this finding could have affected the integrity of the fuel cladding by exceeding fuel design criteria, the inspectors determined that this finding was of very low safety significance because Unit 2 reactor power did not exceed 102 percent.

Inspection Report# : [2001010\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Jan 12, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY POST AND BARRICADE A HIGH RADIATION AREA

The inspector identified a Non-cited Violation for the failure to provide an adequate barricade and to conspicuously post a high radiation area within the radioactive waste truck bay in accordance with Technical Specification 5.7.1. The finding was of very low significance because the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure.

Inspection Report# : [2001004\(pdf\)](#)

Significance: SL-IV Oct 24, 2000

Identified By: Licensee

Item Type: VIO Violation

DELIBERATE VIOLATION OF RADIATION PROTECTION PROCEDURES (EA# 00171 NOV LETTER DATED 9/22/2000)

The licensee identified that an individual deliberately violated radiation protection procedures on November 2, 1999. Specifically, the individual entered a High Contamination and High Radiation Area within the reactor containment building without having the proper authorization. Prior to the entry, the individual was instructed by his supervisor to work in another area of containment and was told by radiation protection staff that he could not enter the High Radiation Area without a pre-job briefing and a specific radiation work permit. Although no radiological consequences resulted from the individual's actions within the area, the NRC determined that the individual's actions constituted a deliberate violation of the licensee's procedure and issued the licensee a Severity Level IV Notice of Violation.

Inspection Report# : [2000016\(pdf\)](#)

Inspection Report# : [2001004\(pdf\)](#)

Significance:  Jun 16, 2000

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST A HIGH RADIATION AREA

The inspector identified a noncited violation for the failure to post a high radiation area in accordance with 10 CFR 20.1902(b). Specifically, accessible areas of the 1A letdown heat exchanger room, having radiation levels exceeding 100 millirem per hour at 30 centimeters (from the surface of the heat exchanger), were not posted as a high radiation area. Instead, the licensee had placed a caution sign with the words "NO ENTRY" on a plexiglass partition, which limited access to the area. Although the area was not adequately posted, the inspector concluded that it was unlikely that an individual could have inadvertently entered the area and obtained an overexposure. Consequently, this finding was determined to be of very low safety significance

Inspection Report# : [2000010\(pdf\)](#)

Public Radiation Safety

Physical Protection

Significance:  Jun 30, 2001

Identified By: NRC

Item Type: FIN Finding

A PORTION OF ONE ZONE OF THE PERIMETER INTRUSION ALARM SYSTEM WAS SUSCEPTIBLE TO PENETRATION.

The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device. This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters. There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

Inspection Report# : [2001009\(pdf\)](#)

Significance:  May 22, 2001

Identified By: NRC

Item Type: FIN Finding

PARTICIPANTS IN THE STRESS FIRE WEAPON COURSE FAILED TO MEET THE LICENSEE'S LEVEL OF PROFICIENCY.

The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan. This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred.

Inspection Report# : [2001009\(pdf\)](#)

Miscellaneous

Significance:  Nov 15, 2001

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT THE CONTAINMENT RADIATION MONITOR AFTER THE EXPECTED RESPONSE WAS NOT OBTAINED DURING A MAINTENANCE ACTIVITY

The inspectors identified that the licensee failed to adequately evaluate the unlit "instrument available" light on the Unit 2 containment radiation monitor 2AR11J which resulted in the failure to identify that the radiation monitor was inoperable. This finding was determined to be of very low safety significance because the failure did not result in an actual open pathway in the physical integrity of the reactor containment. A Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Nov 15, 2001

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the significance threshold for entering issues into the corrective action program appeared appropriate. However, three issues of very low safety significance (Green) were identified which were related to an inconsistency in the threshold for initiating a condition report. In general, corrective actions specified were appropriate based on the identified causes and were effective in preventing recurrence of significant conditions adverse to quality. Licensee audits and assessments were thorough and identified issues similar to NRC observations. During interviews, station personnel stated they were not reluctant to raise safety issues; however, some staff members expressed hesitance to question management decisions. Additionally, while the overall program allowed the station to identify and resolve problems, a potential weakness in the station's implementation of the program related to training timeliness was identified.

Inspection Report# : [2001015\(pdf\)](#)

Significance: N/A Aug 13, 2001

Identified By: NRC

Item Type: FIN Finding

ADVERSE TREND IN OPERATOR HUMAN PERFORMANCE [THIS ISSUE WAS DISCUSSED AGAIN IN INSPECTION REPORT 454/455-2001-14.]

Similar operator human performance errors were identified in the initiating events, mitigating systems, and barrier integrity cornerstones. The inspectors noted 6 operator errors associated with procedural adherence and knowledge-based decisions over the last 12 months. These operator errors resulted in the inoperability of systems designed to mitigate the consequences of accidents and/or provide barrier integrity, resulted in the violation of TS requirements, and resulted in plant transients. While the risk significance associated with each of the individual events was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue.

Inspection Report# : [2001010\(pdf\)](#)

Significance: N/A Dec 15, 2000

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION SUMMARY

The inspectors determined the licensee staff were effective in identifying and resolving problems in accordance with the corrective action program. Also, the inspectors concluded that the licensee staff communicated an acceptable level of responsibility for identifying and entering safety issues into the corrective action program. However, the inspectors also identified several examples of minor problems that did not result in adverse consequences and which were similar to problems identified by licensee staff during self-assessments. The inspectors identified some evaluations of condition reports that were not rigorously performed or were narrowly focused. As a result, the developed corrective actions were not always appropriate to the circumstances or were not totally effective. The inspectors also determined the licensee staff did not always develop condition reports to document and track the resolution of problems identified during effectiveness reviews of corrective actions for past condition reports.

Inspection Report# : [2000020\(pdf\)](#)

Byron 2

Initiating Events



Significance: Dec 28, 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\(pdf\)](#)



Significance: Sep 30, 2002

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO MANAGE SHUTDOWN RISK ASSOCIATED WITH SWITCHYARD ACTIVITIES DURING REDUCED RCS INVENTORY

A finding of very low safety significance was identified through a self-revealing event. Specifically, the licensee failed to assess and manage the increase in risk associated switchyard maintenance activities that commenced prior to restoring reactor coolant system (RCS) inventory to greater than 5 percent pressurizer level as required by the licensee's preestablished contingency plan. This was identified when the outage manager contacted the switchyard coordinator to inform him that the prerequisite regarding RCS inventory was about to be met, at which time the outage manager was informed that work already commenced. The primary cause of this finding was related to the cross-cutting area of Human Performance. Although administrative controls were in place to prevent switchyard work the RCS was at reduced inventory, the controls were not implemented. The finding was more than minor because it increased the likelihood of those events that upset plant stability and challenge a critical safety function, specifically electric power control, during shutdown operations. The finding was of very low safety significance because both emergency diesel generators were subsequently determined to be available; therefore, providing sufficient redundancy such that the licensee's ability to cope with a loss of offsite power was not degraded during the switchyard activities. This was determined to be a Non-Cited Violation of 10 CFR 50.65 (a)(4).

Inspection Report# : [2002006\(pdf\)](#)

Mitigating Systems



Significance: Dec 28, 2002

Identified By: Self Disclosing

Item Type: FIN Finding

FAILURE TO ADEQUATELY EVALUATE THE OPERABILITY OF THE 2B SX 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\(pdf\)](#)

G**Significance:** Sep 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

ADEQUATE ACCEPTANCE CRITERIA FOR GENERIC LETTER 89-13 HEAT EXCHANGER INSPECTIONS

The inspectors identified a finding of very low safety significance regarding inadequate acceptance criteria for the licensee's Generic Letter 89-13 heat exchanger inspections. The inspectors identified this issue during observations and review of the licensee's inspection of an auxiliary feedwater system heat exchanger. The finding was more than minor because it adversely affected the licensee's ability to ensure that safety-related heat exchangers would be available, reliable, and capable of responding to initiating events to prevent undesirable consequences. The finding was very low safety significance because the as-found and as-left conditions of the heat exchangers did not reveal any actual concerns with the operability of the heat exchangers. This was determined to be a Non-Cited Violation of 10 CFR 50 Appendix B, Criteria V.

Inspection Report# : [2002006\(pdf\)](#)**Significance:** SL-IV Jun 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE 50.59 EVALUATION RESULTED IN THE CCW SYSTEM NOT MEETING SINGLE FAILURE CRITERIA FOR A THERMAL BARRIER HEAT EXCHANGER RUPTURE EVENT

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the Updated Final Safety Analysis Report (UFSAR) that involved an unreviewed safety question and for which prior NRC approval was not obtained per the requirements of 10 CFR 50.59 in effect at the time. Specifically, the licensee changed the UFSAR and failed to adequately evaluate: 1) an elimination of performance requirements for valve 1/2CC-9438 associated with isolation of a loss of coolant accident following a thermal barrier heat exchanger rupture; 2) a decrease in the number, from two to one, of valves in the component cooling water return line that were relied upon to meet the performance requirements of General Design Criteria 44 and 54, and; 3) a substitution of operator manual actions for a remote manual valve closure. This change to the facility, as described in the UFSAR, created the possibility for a new accident not previously evaluated in the UFSAR. Because the Significance Determination Process (SDP) is not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue was dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. However, the results of the violation, that is, the elimination of performance requirements for one of two valves relied upon to isolate a loss of coolant accident involving a thermal barrier heat exchanger rupture, were assessed using the SDP. The severity level of the violation was then based upon the SDP assessment for the results of the violation. The results of the violation were considered to have more than minor safety significance, in that, the results of the violation had a credible impact on safety by affecting the operability, availability, reliability, or functioning of the component cooling water system. However, the results of the violation did not cause a loss of function of the component cooling water system per the guidance of Generic Letter 91-18, "Resolution of Degraded and Non-Conforming Conditions." Therefore, the results of the violation were determined to be of very low safety significance, a Green finding, and the violation of 10 CFR 50.59 was classified as a Severity Level IV violation. Because this non-willful violation was non-repetitive, and was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with the NRC Enforcement Policy.

Inspection Report# : [2002005\(pdf\)](#)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : March 25, 2003

Byron 2

1Q/2003 Plant Inspection Findings

Initiating Events

Significance:  Dec 28, 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\(pdf\)](#)

Significance:  Sep 30, 2002

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO MANAGE SHUTDOWN RISK ASSOCIATED WITH SWITCHYARD ACTIVITIES DURING REDUCED RCS INVENTORY

A finding of very low safety significance was identified through a self-revealing event. Specifically, the licensee failed to assess and manage the increase in risk associated switchyard maintenance activities that commenced prior to restoring reactor coolant system (RCS) inventory to greater than 5 percent pressurizer level as required by the licensee's preestablished contingency plan. This was identified when the outage manager contacted the switchyard coordinator to inform him that the prerequisite regarding RCS inventory was about to be met, at which time the outage manager was informed that work already commenced. The primary cause of this finding was related to the cross-cutting area of Human Performance. Although administrative controls were in place to prevent switchyard work the RCS was at reduced inventory, the controls were not implemented. The finding was more than minor because it increased the likelihood of those events that upset plant stability and challenge a critical safety function, specifically electric power control, during shutdown operations. The finding was of very low safety significance because both emergency diesel generators were subsequently determined to be available; therefore, providing sufficient redundancy such that the licensee's ability to cope with a loss of offsite power was not degraded during the switchyard activities. This was determined to be a Non-Cited Violation of 10 CFR 50.65 (a)(4).

Inspection Report# : [2002006\(pdf\)](#)

Mitigating Systems

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\(pdf\)](#)

Significance:  Dec 28, 2002

Identified By: Self Disclosing

Item Type: FIN Finding

FAILURE TO ADEQUATELY EVALUATE THE OPERABILITY OF THE 2B SX 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\(pdf\)](#)

Significance:  Sep 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

ADEQUATE ACCEPTANCE CRITERIA FOR GENERIC LETTER 89-13 HEAT EXCHANGER INSPECTIONS

The inspectors identified a finding of very low safety significance regarding inadequate acceptance criteria for the licensee's Generic Letter 89-13 heat exchanger inspections. The inspectors identified this issue during observations and review of the licensee's inspection of an auxiliary feedwater system heat exchanger. The finding was more than minor because it adversely affected the licensee's ability to ensure that safety-related heat exchangers would be available, reliable, and capable of responding to initiating events to prevent undesirable consequences. The finding was very low safety significance because the as-found and as-left conditions of the heat exchangers did not reveal any actual concerns with the operability of the heat exchangers. This was determined to be a Non-Cited Violation of 10 CFR 50 Appendix B, Criteria V.
Inspection Report# : [2002006\(pdf\)](#)

Significance: SL-IV Jun 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE 50.59 EVALUATION RESULTED IN THE CCW SYSTEM NOT MEETING SINGLE FAILURE CRITERIA FOR A THERMAL BARRIER HEAT EXCHANGER RUPTURE EVENT

The inspectors identified a Severity Level IV Non-Cited Violation. In July 1998, the licensee implemented a change to the Updated Final Safety Analysis Report (UFSAR) that involved an unreviewed safety question and for which prior NRC approval was not obtained per the requirements of 10 CFR 50.59 in effect at the time. Specifically, the licensee changed the UFSAR and failed to adequately evaluate: 1) an elimination of performance requirements for valve 1/2CC-9438 associated with isolation of a loss of coolant accident following a thermal barrier heat exchanger rupture; 2) a decrease in the number, from two to one, of valves in the component cooling water return line that were relied upon to meet the performance requirements of General Design Criteria 44 and 54, and; 3) a substitution of operator manual actions for a remote manual valve closure. This change to the facility, as described in the UFSAR, created the possibility for a new accident not previously evaluated in the UFSAR. Because the Significance Determination Process (SDP) is not designed to assess the significance of violations that potentially impact or impede the regulatory process, this issue was dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. However, the results of the violation, that is, the elimination of performance requirements for one of two valves relied upon to isolate a loss of coolant accident involving a thermal barrier heat exchanger rupture, were assessed using the SDP. The severity level of the violation was then based upon the SDP assessment for the results of the violation. The results of the violation were considered to have more than minor safety significance, in that, the results of the violation had a credible impact on safety by affecting the operability, availability, reliability, or functioning of the component cooling water system. However, the results of the violation did not cause a loss of function of the component cooling water system per the guidance of Generic Letter 91-18, "Resolution of Degraded and Non-Conforming Conditions." Therefore, the results of the violation were determined to be of very low safety significance, a Green finding, and the violation of 10 CFR 50.59 was classified as a Severity Level IV violation. Because this non-willful violation was non-repetitive, and was captured in the licensee's corrective action program, this issue is being treated as a Non-Cited Violation, consistent with the NRC Enforcement Policy.

Inspection Report# : [2002005\(pdf\)](#)

Barrier Integrity



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

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : May 30, 2003

Byron 2

2Q/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\(pdf\)](#)

Significance:  Sep 30, 2002

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO MANAGE SHUTDOWN RISK ASSOCIATED WITH SWITCHYARD ACTIVITIES DURING REDUCED RCS INVENTORY

A finding of very low safety significance was identified through a self-revealing event. Specifically, the licensee failed to assess and manage the increase in risk associated switchyard maintenance activities that commenced prior to restoring reactor coolant system (RCS) inventory to greater than 5 percent pressurizer level as required by the licensee's preestablished contingency plan. This was identified when the outage manager contacted the switchyard coordinator to inform him that the prerequisite regarding RCS inventory was about to be met, at which time the outage manager was informed that work already commenced. The primary cause of this finding was related to the cross-cutting area of Human Performance. Although administrative controls were in place to prevent switchyard work the RCS was at reduced inventory, the controls were not implemented. The finding was more than minor because it increased the likelihood of those events that upset plant stability and challenge a critical safety function, specifically electric power control, during shutdown operations. The finding was of very low safety significance because both emergency diesel generators were subsequently determined to be available; therefore, providing sufficient redundancy such that the licensee's ability to cope with a loss of offsite power was not degraded during the switchyard activities. This was determined to be a Non-Cited Violation of 10 CFR 50.65 (a)(4).

Inspection Report# : [2002006\(pdf\)](#)

Mitigating Systems

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

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: 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: 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\(pdf\)](#)

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\(pdf\)](#)

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\(pdf\)](#)

Significance:  Sep 30, 2002

Identified By: NRC

Item Type: NCV NonCited Violation

ADEQUATE ACCEPTANCE CRITERIA FOR GENERIC LETTER 89-13 HEAT EXCHANGER INSPECTIONS

The inspectors identified a finding of very low safety significance regarding inadequate acceptance criteria for the licensee's Generic Letter 89-13 heat exchanger inspections. The inspectors identified this issue during observations and review of the licensee's inspection of an auxiliary feedwater system heat exchanger. The finding was more than minor because it adversely affected the licensee's ability to ensure that safety-related heat exchangers would be available, reliable, and capable of responding to initiating events to prevent undesirable consequences. The finding was very low safety significance because the as-found and as-left conditions of the heat exchangers did not reveal any actual concerns with the operability of the heat exchangers. This was determined to be a Non-Cited Violation of 10 CFR 50 Appendix B, Criteria V.

Inspection Report# : [2002006\(pdf\)](#)

Barrier Integrity

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

Public Radiation Safety

Physical Protection

Miscellaneous

Last modified : September 04, 2003

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

Byron 2

4Q/2003 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: SL-IV Dec 31, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO UPDATE THE UPDATED FINAL SAFETY ANALYSIS REPORT IN A TIMELY MANNER.

A finding of very low safety significance was self-revealed when the licensee discovered that an update to the Updated Final Safety Analysis Report was not accomplished for a period of almost 6 years following a design change. Between June and September of 1996, the licensee made a revision to the reactor water storage tank level set-point calculation to clarify design basis information with respect to emergency core cooling system and containment spray system operation and re-evaluated the time available to complete switchover to recirculation. The licensee did not include this update until the December 2002 revision to the Updated Final Safety Analysis Report.

Because this issue potentially impacted the NRC's ability to perform its regulatory function, this finding was evaluated using the traditional enforcement process. The finding was determined to be of very low safety significance because it did not actually impede or influence any regulatory actions. This was determined to be a Severity Level IV NCV of 10 CFR 50.71.

Inspection Report# : [2003007\(pdf\)](#)

Significance:  Dec 04, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND IMPLEMENT CORRECTIVE ACTIONS TO PREVENT RECURRENCE OF A SIGNIFICANT CONDITION ADVERSE TO QUALITY.

The team identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for inadequate corrective actions to preclude repetition of a significant condition adverse to quality. The licensee failed to determine the cause and take prompt corrective actions to preclude repetition for the failure of the 2B centrifugal charging pump (CCP) shaft. Neither the root cause report or the common cause analysis associated with this failure identified a specific root cause for the failure. Absent a root cause, the licensee presented three potential causes. The licensee implemented minimal corrective actions to address only one of the potential causes, specifically gas entrainment. Four options addressing the other two potential causes were identified and evaluated. For each of these options, the licensee determined that they were cost prohibitive and not financially justified. The team was unable to identify any corrective action planned or committed to in the licensee corrective actions program implementing actions to address the correction of the potential causes such that a high level of confidence exists that subsequent CCP shaft failures will be prevented.

The issue is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesired

consequences. The finding was determined to be of very low safety significance because the finding (1) did not result in a design or qualification deficiency confirmed not to result in a loss of function per Generic Letter 91-18; (2) did not represent an actual loss of safety function; (3) did not represent an actual loss of safety function of a single train for greater than the technical specification allowed outage time; (4) did not represent an actual loss of safety function of one or more non-Technical Specification trains designated as risk significant per the Maintenance Rule for greater than 24 hours; and (5) did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating events.

Inspection Report# : [2003009\(pdf\)](#)



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: 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:  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

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: 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: 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\(pdf\)](#)

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\(pdf\)](#)

Barrier Integrity

Significance:  Dec 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT A CONDITION ADVERSE TO QUALITY WITH REGARD TO NON-CONSERVATIVE ERROR IN PR11J SETPOINT ANALYSIS.

A finding of very low safety significance and associated NCV was identified by the inspectors for the licensee's failure to identify and correct a condition adverse to quality. Specifically, the licensee failed to recognize that the containment atmosphere radiation gaseous monitors were inoperable when it was determined that the monitors were not capable of detecting reactor coolant leakage in a reasonable period of time. The finding also affected the cross-cutting area of Problem Identification and Resolution because although the issue was discovered by the licensee's staff, they failed to recognize the significance of the issue until questioned by the NRC inspectors.

The findings was greater than minor because the finding was associated with the barrier integrity cornerstone and, if left uncorrected, could result in an undetected reactor coolant system leak. The finding was determined to be of very low safety significance by management review because alternate methods of detecting small reactor coolant system leaks were available. To correct the immediate issue, the licensee declared the monitor inoperable and submitted a Technical Specification change. This issue was a NCV of 10 CFR 50 Appendix B Criteria XVI, "Corrective Action."
Inspection Report# : [2003007\(pdf\)](#)

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 labor 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 : March 02, 2004

Byron 2

1Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems



Significance: 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\(pdf\)](#)

Significance: SL-IV Dec 31, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO UPDATE THE UPDATED FINAL SAFETY ANALYSIS REPORT IN A TIMELY MANNER.

A finding of very low safety significance was self-revealed when the licensee discovered that an update to the Updated Final Safety Analysis Report was not accomplished for a period of almost 6 years following a design change. Between June and September of 1996, the licensee made a revision to the reactor water storage tank level set-point calculation to clarify design basis information with respect to emergency core cooling system and containment spray system operation and re-evaluated the time available to complete switchover to recirculation. The licensee did not include this update until the December 2002 revision to the Updated Final Safety Analysis Report.

Because this issue potentially impacted the NRC's ability to perform its regulatory function, this finding was evaluated using the traditional enforcement process. The finding was determined to be of very low safety significance because it did not actually impede or influence any regulatory actions. This was determined to be a Severity Level IV NCV of 10 CFR 50.71.

Inspection Report# : [2003007\(pdf\)](#)



Significance: Dec 04, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND IMPLEMENT CORRECTIVE ACTIONS TO PREVENT RECURRENCE OF A SIGNIFICANT CONDITION ADVERSE TO QUALITY.

The team identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for inadequate corrective actions to preclude repetition of a significant condition adverse to quality. The licensee failed to determine the cause and take prompt corrective actions to preclude repetition for the failure of the 2B centrifugal charging pump (CCP) shaft. Neither the root cause report or the common cause analysis associated with this failure identified a specific root cause for the failure. Absent a root cause, the licensee presented three potential causes. The licensee implemented minimal corrective actions to address only one of the

potential causes, specifically gas entrainment. Four options addressing the other two potential causes were identified and evaluated. For each of these options, the licensee determined that they were cost prohibitive and not financially justified. The team was unable to identify any corrective action planned or committed to in the licensee corrective actions program implementing actions to address the correction of the potential causes such that a high level of confidence exists that subsequent CCP shaft failures will be prevented.

The issue is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesired consequences. The finding was determined to be of very low safety significance because the finding (1) did not result in a design or qualification deficiency confirmed not to result in a loss of function per Generic Letter 91-18; (2) did not represent an actual loss of safety function; (3) did not represent an actual loss of safety function of a single train for greater than the technical specification allowed outage time; (4) did not represent an actual loss of safety function of one or more non-Technical Specification trains designated as risk significant per the Maintenance Rule for greater than 24 hours; and (5) did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating events.

Inspection Report# : [2003009\(pdf\)](#)



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: 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: 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

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\(pdf\)](#)



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\(pdf\)](#)

Barrier Integrity

G

Significance: 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\(pdf\)](#)

G

Significance: Dec 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT A CONDITION ADVERSE TO QUALITY WITH REGARD TO NON-CONSERVATIVE ERROR IN PR11J SETPOINT ANALYSIS.

A finding of very low safety significance and associated NCV was identified by the inspectors for the licensee's failure to identify and correct a condition adverse to quality. Specifically, the licensee failed to recognize that the containment atmosphere radiation gaseous monitors were inoperable when it was determined that the monitors were not capable of detecting reactor coolant leakage in a reasonable period of time. The finding also affected the cross-cutting area of Problem Identification and Resolution because although the issue was discovered by the licensee's staff, they failed to recognize the significance of the issue until questioned by the NRC inspectors.

The findings was greater than minor because the finding was associated with the barrier integrity cornerstone and, if left uncorrected, could result in an undetected reactor coolant system leak. The finding was determined to be of very low safety significance by management review because alternate methods of detecting small reactor coolant system leaks were available. To correct the immediate issue, the licensee declared the monitor inoperable and submitted a Technical Specification change. This issue was a NCV of 10 CFR 50 Appendix B Criteria XVI, "Corrective Action."

Inspection Report# : [2003007\(pdf\)](#)

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\(pdf\)](#)

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 labor 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 : May 05, 2004

Byron 2

2Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems

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\(pdf\)](#)

Significance: SL-IV Dec 31, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO UPDATE THE UPDATED FINAL SAFETY ANALYSIS REPORT IN A TIMELY MANNER.

A finding of very low safety significance was self-revealed when the licensee discovered that an update to the Updated Final Safety Analysis Report was not accomplished for a period of almost 6 years following a design change. Between June and September of 1996, the licensee made a revision to the reactor water storage tank level set-point calculation to clarify design basis information with respect to emergency core cooling system and containment spray system operation and re-evaluated the time available to complete switchover to recirculation. The licensee did not include this update

until the December 2002 revision to the Updated Final Safety Analysis Report.

Because this issue potentially impacted the NRC's ability to perform its regulatory function, this finding was evaluated using the traditional enforcement process. The finding was determined to be of very low safety significance because it did not actually impede or influence any regulatory actions. This was determined to be a Severity Level IV NCV of 10 CFR 50.71.

Inspection Report# : [2003007\(pdf\)](#)

Significance:  Dec 04, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND IMPLEMENT CORRECTIVE ACTIONS TO PREVENT RECURRENCE OF A SIGNIFICANT CONDITION ADVERSE TO QUALITY.

The team identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for inadequate corrective actions to preclude repetition of a significant condition adverse to quality. The licensee failed to determine the cause and take prompt corrective actions to preclude repetition for the failure of the 2B centrifugal charging pump (CCP) shaft. Neither the root cause report or the common cause analysis associated with this failure identified a specific root cause for the failure. Absent a root cause, the licensee presented three potential causes. The licensee implemented minimal corrective actions to address only one of the potential causes, specifically gas entrainment. Four options addressing the other two potential causes were identified and evaluated. For each of these options, the licensee determined that they were cost prohibitive and not financially justified. The team was unable to identify any corrective action planned or committed to in the licensee corrective actions program implementing actions to address the correction of the potential causes such that a high level of confidence exists that subsequent CCP shaft failures will be prevented.

The issue is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesired consequences. The finding was determined to be of very low safety significance because the finding (1) did not result in a design or qualification deficiency confirmed not to result in a loss of function per Generic Letter 91-18; (2) did not represent an actual loss of safety function; (3) did not represent an actual loss of safety function of a single train for greater than the technical specification allowed outage time; (4) did not represent an actual loss of safety function of one or more non-Technical Specification trains designated as risk significant per the Maintenance Rule for greater than 24 hours; and (5) did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating events.

Inspection Report# : [2003009\(pdf\)](#)

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\(pdf\)](#)

Barrier Integrity

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\(pdf\)](#)

Significance: G Dec 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT A CONDITION ADVERSE TO QUALITY WITH REGARD TO NON-CONSERVATIVE ERROR IN PR11J SETPOINT ANALYSIS.

A finding of very low safety significance and associated NCV was identified by the inspectors for the licensee's failure to identify and correct a condition adverse to quality. Specifically, the licensee failed to recognize that the containment atmosphere radiation gaseous monitors were inoperable when it was determined that the monitors were not capable of detecting reactor coolant leakage in a reasonable period of time. The finding also affected the cross-cutting area of Problem Identification and Resolution because although the issue was discovered by the licensee's staff, they failed to recognize the significance of the issue until questioned by the NRC inspectors.

The findings was greater than minor because the finding was associated with the barrier integrity cornerstone and, if left uncorrected, could result in an undetected reactor coolant system leak. The finding was determined to be of very low safety significance by management review because alternate methods of detecting small reactor coolant system leaks were available. To correct the immediate issue, the licensee declared the monitor inoperable and submitted a Technical Specification change. This issue was a NCV of 10 CFR 50 Appendix B Criteria XVI, "Corrective Action."

Inspection Report# : [2003007\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Significance: G 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 labor 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

[Physical Protection](#) information not publicly available.

Miscellaneous

Last modified : September 08, 2004

Byron 2

3Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  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 of 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:  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:  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 September 15, 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:  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:  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 function.

Inspection Report# : [2004007\(pdf\)](#)

Significance:  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:  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\(pdf\)](#)

G

Significance: 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 the control room did not provide sufficient direction to restore a faulted pressurizer PORV power source.

Inspection Report# : [2004005\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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 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\(pdf\)](#)

Significance: SL-IV Dec 31, 2003

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO UPDATE THE UPDATED FINAL SAFETY ANALYSIS REPORT IN A TIMELY MANNER.

A finding of very low safety significance was self-revealed when the licensee discovered that an update to the Updated Final Safety Analysis Report was not accomplished for a period of almost 6 years following a design change. Between June and September of 1996, the licensee made a revision to the reactor water storage tank level set-point calculation to clarify design basis information with respect to emergency core cooling system and containment spray system operation and re-evaluated the time available to complete switchover to recirculation. The licensee did not include this update until the December 2002 revision to the Updated Final Safety Analysis Report.

Because this issue potentially impacted the NRC's ability to perform its regulatory function, this finding was evaluated using the traditional enforcement process. The finding was determined to be of very low safety significance because it did not actually impede or influence any regulatory actions. This was determined to be a Severity Level IV NCV of 10 CFR 50.71.

Inspection Report# : [2003007\(pdf\)](#)

G

Significance: Dec 04, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND IMPLEMENT CORRECTIVE ACTIONS TO PREVENT RECURRENCE OF A SIGNIFICANT CONDITION ADVERSE TO QUALITY.

The team identified a finding of very low safety significance and an associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for inadequate corrective actions to preclude repetition of a significant condition adverse to quality. The licensee failed to determine the cause and take prompt corrective actions to preclude repetition for the failure of the 2B centrifugal charging pump (CCP) shaft. Neither the root cause report or the common cause analysis associated with this failure identified a specific root cause for the failure. Absent a root cause, the licensee presented three potential causes. The licensee implemented minimal corrective actions to address only one of the potential causes, specifically gas entrainment. Four options addressing the other two potential causes were identified and evaluated. For each of these options, the licensee determined that they were cost prohibitive and not financially justified. The team was unable to identify any corrective action planned or committed to in the licensee corrective actions program implementing actions to address the correction of the potential causes such that a high level of confidence exists that subsequent CCP shaft failures will be prevented.

The issue is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone objective to ensure the reliability of systems that respond to initiating events to prevent undesired consequences. The finding was determined to be of very low safety significance because the finding (1) did not result in a design or qualification deficiency confirmed not to result in a loss of function per Generic Letter 91-18; (2) did not represent an actual loss of safety function; (3) did not represent an actual loss of safety function of a single train for greater than the technical specification allowed outage time; (4) did not represent an actual loss of safety function of one or more non-Technical Specification trains designated as risk significant per the Maintenance Rule for greater than 24 hours; and (5) did not screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating events.

Inspection Report# : [2003009\(pdf\)](#)

Barrier Integrity

Significance:  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\(pdf\)](#)

Significance:  Dec 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY AND CORRECT A CONDITION ADVERSE TO QUALITY WITH REGARD TO NON-CONSERVATIVE ERROR IN PR11J SETPOINT ANALYSIS.

A finding of very low safety significance and associated NCV was identified by the inspectors for the licensee's failure to identify and correct a condition adverse to quality. Specifically, the licensee failed to recognize that the containment atmosphere radiation gaseous monitors were inoperable when it was determined that the monitors were not capable of detecting reactor coolant leakage in a reasonable period of time. The finding also affected the cross-cutting area of Problem Identification and Resolution because although the issue was discovered by the licensee's staff, they failed to recognize the significance of the issue until questioned by the NRC inspectors.

The findings was greater than minor because the finding was associated with the barrier integrity cornerstone and, if left uncorrected, could result in an undetected reactor coolant system leak. The finding was determined to be of very low safety significance by management review because alternate methods of detecting small reactor coolant system leaks were available. To correct the immediate issue, the licensee declared the monitor inoperable and submitted a Technical Specification change. This issue was a NCV of 10 CFR 50 Appendix B Criteria XVI, "Corrective Action."

Inspection Report# : [2003007\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Last modified : December 29, 2004

Byron 2

4Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  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 of 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:  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 September 15, 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:  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\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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 function.

Inspection Report# : [2004007\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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 the control room did not provide sufficient direction to restore a faulted pressurizer PORV power source.

Inspection Report# : [2004005\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

Barrier Integrity

G

Significance: Dec 31, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation

INADEQUATE PROCEDURES ASSOCIATED WITH CALCULATING, REVIEWING AND APPROVING DILUTIONS 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\(pdf\)](#)

G

Significance: 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

Byron 2

1Q/2005 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  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 function.

Inspection Report# : [2004007\(pdf\)](#)

Significance:  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:  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\(pdf\)](#)

G

Significance: 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 September 15, 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\(pdf\)](#)

G

Significance: 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 of 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\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

G

Significance: 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 the control room did not provide sufficient direction to restore a faulted pressurizer PORV power source.

Inspection Report# : [2004005\(pdf\)](#)

G

Significance: 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\(pdf\)](#)

Barrier Integrity

Significance:  Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CONTROL CONTAINMENT PENETRATIONS IN ACCORDANCE WITH TECHNICAL SPECIFICATION 3.9.4C DURING CORE ALTERATIONS.

A finding of very low safety significance and an associated NCV of TS 3.9.4c was identified by the NRC. Specifically, the inspectors determined that during the performance of local leak rate tests the licensee failed to maintain containment penetrations closed while core alterations were in progress as was required by the TS.

The finding was more than minor because it affected the configuration control, specifically containment boundary preservation, attribute associated with the Reactor Safety Barrier Integrity Cornerstone objective to provide reasonable assurance that physical barriers, specifically containment, protect the public from radionuclide releases caused by accidents or events. This finding was of very low safety significance because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; and (3) the issue did not degrade the licensee's ability to recover decay heat removal once lost. Furthermore, the issue only impacted the containment function without affecting core damage frequency, and was associated with a shutdown condition during periods when the reactor vessel water level was greater than or equal to the level required for fuel moves.
Inspection Report# : [2005003\(pdf\)](#)

Significance:  Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

EXCEEDING 100% LICENSED POWER FOLLOWING THE IMPLEMENTATION OF THE ULTRASONIC FEEDWATER FLOW MEASURING INSTRUMENTS.

A finding of very low safety significance and an associated NCV for operating in excess of the licensed thermal power limits was self-revealed. Specifically, it was determined that for periods between May 2000 and August 2003, the installed feedwater ultrasonic flow measurement instruments provided non-conservative data to the reactor power calculation which resulted in power operation greater than the licensed maximum thermal power output of 3586.6 megawatts thermal (100 percent power). Unit 1 operated with a maximum power level of 102.62 percent. Unit 2 operated with a maximum power level of 101.88 percent. This finding was related to the cross-cutting area of Problem Identification and Resolution (evaluation) because the licensee missed several opportunities to determine that an over power condition existed.

This finding was more than minor because it affected the Barrier Integrity Cornerstone objective of providing reasonable assurance that the physical design barrier of fuel cladding protect the public from radionuclide releases caused by accidents or events, and was associated with the attribute of design control (core design analysis). The finding was of very low safety significance because of the fuel cladding barrier was not degraded.

Inspection Report# : [2005003\(pdf\)](#)

Significance:  Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE PROCEDURES ASSOCIATED WITH CALCULATING, REVIEWING AND APPROVING DILUTIONS 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\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLOGICAL CONDITIONS PRIOR TO A SIGNIFICANT EQUIPMENT CONFIGURATION CHANGE.

One self-revealed finding of very low safety significance and an associated Non-Cited Violation was identified when, on March 12, 2005, the licensee failed to conduct an adequate evaluation of the radiological conditions prior to removing the charcoal adsorber portion of HEPA units associated with work on the Unit 1 steam generators. Subsequently, Unit 1 Containment radiological conditions changed such that several air monitors went into high alarm on the iodine channel and 28 personnel were found to have unintended, low-level, internal contamination.

The issue was more than minor because it was associated with the Human Performance attribute (a cross-cutting area) of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radioactive materials in that multiple workers received unintended dose from small intakes. In that the finding was no specifically related to ALARA or planning issues, there was no radiological overexposures, nor the substantial potential for an overexposure, and the licensee's ability to assess worker dose was not compromised, the finding was determined to be of very low safety significance. The licensee's corrective actions for this issue included reinstalling the charcoal adsorbers and initiating additional containment atmosphere treatment, revising procedures to include specific criteria for charcoal adsorber removal, and modifying the outage schedule such that charcoal adsorber removal is logically tied to steam generator manway installation. One Non-Cited Violation for the failure to adequately evaluate radiological conditions in accordance with 10 CFR 20.1501 was also identified.

Inspection Report# : [2005003\(pdf\)](#)

Significance:  Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN A RADIATION PROTECTION BRIEFING PRIOR TO AN ENTRY INTO A HIGH RADIATION AREA.

One self-revealed finding of very low safety significance and an associated NCV was identified when, on March 9, 2005, a contract radiation worker, while supporting polar crane movement of equipment used for the upper internals split pin modification, entered a High Radiation Area (HRA) without receiving a high radiation area brief from the radiation protection staff as required by the Radiation Work Permit.

The primary cause of this finding was related to the cross-cutting area of Human Performance (personnel). This issue was more than minor because it was associated with the Human Performance attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radioactive materials in that two barriers (i.e., the HRA briefing and compliance with the HRA posting) in place to prevent unplanned, unintended worker dose failed. In that the finding was no specifically related to ALARA or planning issues, there were no radiological overexposures, nor the substantial potential for an overexposure, and the licensee's ability to assess worker dose was not compromised, the finding was determined to be of very low safety significance. The licensee's corrective actions for this issue included enhancing the physical and administrative RP controls over HRAs within containment. One Non-Cited Violation for the failure to obtain a HRA briefing prior to entry into the area in accordance with licensee procedures and Technical Specification 5.4.1 was also identified.

Inspection Report# : [2005003\(pdf\)](#)

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Last modified : June 17, 2005

Byron 2

2Q/2005 Plant Inspection Findings

Initiating Events

G**Significance:** Jun 30, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Failure to Follow Severe Weather Procedure Results in Less than Required Essential Service Water Basin Level

A finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification (TS) 5.4.1 regarding procedure adherence was self revealed, when during a tornado watch, operators failed to maintain both essential service water basin levels greater than 90 percent as specified in the associated abnormal operating procedure. Upon recognizing the low level condition, operators restored basin level to greater than 90 percent. The primary cause of this violation was related to the cross-cutting area of Human Performance (personnel) because the operators failed to maintain the required basin level even though adequate guidance for maintaining basin level was provided in the associated procedure.

This finding was more than minor because the operators allowed the level to drop below the operating limit; which is similar to the more than minor examples of Section 2 of Appendix E to Inspection Manual Chapter (IMC) 0612. The finding was determined to be of very low safety significance because the condition did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

Inspection Report# : [2005004\(pdf\)](#)**G****Significance:** Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Insufficient Fire Seal Material in Penetration Between Emergency Diesel Generator Rooms and Associated Switchgear Rooms

The inspectors identified a finding of very low safety significance and associated NCV of the license number NPF-66 Section 2.E, requiring that the licensee shall implement and maintain in effect all provisions of the fire protection program as described in the licensee's Fire Protection Report. Specifically, during an inspection of the Division 21 electrical switchgear room the inspectors identified that a penetration that connected the Division 21 electrical switchgear room with the Unit 2 train A diesel generator had not been properly sealed as part of the 3-hour fire barrier. The licensee's extent of condition review identified two more penetrations in the Division 22 electrical switchgear room which also had not been properly sealed. Upon identification of the degraded penetrations, the licensee established the required compensatory fire watches until the penetrations were properly sealed.

This finding was considered more than minor, because it could be reasonably viewed as a precursor to a significant event, specifically a loss of Division 21 or 22 switchgear rooms with a fire in the Unit 2 train A or B diesel-generator rooms or loss of the Unit 2 train A or B diesel generator with a fire in the Division 21 or 22 switchgear rooms. The finding was determined to be of very low safety significance because the condition reflected a fire protection program element whose performance and reliability will be minimally impacted by the inspection finding. That is, if the fire occurred in the Division 21 switchgear room or Unit 2 train A diesel generator room, the fire would be confined in the two areas and the reliance on the Division 22 switchgear power is not effected.

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

Mitigating Systems

G**Significance:** Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

LACK OF HEAT EXCHANGER OVER PRESSURE PROTECTION

A finding of very low safety significance was identified by the inspectors for a Non-Cited Violation of 10 CFR 50.55a. The licensee did not ensure that the essential service water (SX) system contained pressure relief devices or had administrative controls to relieve excessive system pressure as required by Article ND-7110 of the American Society of Mechanical Engineers (ASME) Code, Section III. Once identified, the licensee immediately initiated actions to strengthen the administrative controls to prevent overpressure. This issue also impacted the cross-cutting aspect of problem identification and resolution because the licensee had opportunities to identify the condition in October 2003.

This issue was more than minor because failing to provide overpressure protection to the Unit 0 Component Cooling Heat Exchanger served by

SX could result in inoperability of the component or diverted SX flow. The issue was of very low safety significance because it was not a design issue or an actual loss of the system's safety function.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

NON-SAFETY RELATED THERMOSTATS USED FOR AUXILIARY FEEDWATER PUMP ROOM COOLERS

A finding of very low safety significance was identified by the inspectors for a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The thermostats that control the essential service water (SX) system 1/2SX168 valves were non-safety related and their failure could affect the SX cooler flow to the diesel driven auxiliary feedwater (AFW) pump rooms. The original design review of the component classification failed to address all failure modes. Once identified, the licensee immediately performed an operability determination and based on engineering judgment, concluded that the valves were operable.

This issue was more than minor because failing to ensure proper room cooling could impact the function of temperature sensitive equipment and could result in inoperability of a diesel driven AFW pump. The issue was of very low safety significance because it was a design issue which did not result in loss of function per Generic Letter GL 91-18.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY REVIEW AND MAKE PROCEDURE CHANGES

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." After increasing the minimum required river screen house (RSH) temperature for securing a service water makeup pump from 50 degrees Fahrenheit to 70 degrees Fahrenheit in 1998, the licensee failed to revise two operating procedures. Once identified, the licensee reviewed other procedures and initiated procedure changes.

This issue was more than minor because the licensee failed to ensure that the procedures contained the necessary precautions and steps to ensure continued operability of the SX pumps. The issue was of very low safety significance because it did not represent the actual loss of safety function.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE RIVER SCREEN HOUSE (RSH) VENTILATION CALCULATION

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." A river screen house (RSH) ventilation calculation assumed that only one Essential Service Water (SX) makeup pump would be running and calculated the maximum ambient temperature of the RSH to be 115 degrees Fahrenheit. Licensee personnel failed to consider that two SX makeup pumps could be in operation for up to five hours into an event. Since two pumps could be running, the calculation underestimated the heat input into the RSH from the operating pumps. Once identified, the licensee immediately performed an operability determination and concluded that based on current ambient temperatures, the pumps were operable. Additional assessments will be completed prior to summer temperatures.

This issue was more than minor because exceeding the temperature ratings for components could impact the ability of the diesel-driven pump to perform its safety function. The issue was of very low safety significance because it did not represent an actual loss of a safety function.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: 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 function.
Inspection Report# : [2004007\(pdf\)](#)

G**Significance:** 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\(pdf\)](#)**G****Significance:** 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\(pdf\)](#)**G****Significance:** 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 of 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\(pdf\)](#)**G****Significance:** 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 September 15, 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\(pdf\)](#)

G**Significance:** 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\(pdf\)](#)**G****Significance:** 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\(pdf\)](#)**G****Significance:** 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 the control room did not provide sufficient direction to restore a faulted pressurizer PORV power source.

Inspection Report# : [2004005\(pdf\)](#)

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

Barrier Integrity

G**Significance:** Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CONTROL CONTAINMENT PENETRATIONS IN ACCORDANCE WITH TECHNICAL SPECIFICATION 3.9.4C DURING CORE ALTERATIONS.

A finding of very low safety significance and an associated NCV of TS 3.9.4c was identified by the NRC. Specifically, the inspectors determined that during the performance of local leak rate tests the licensee failed to maintain containment penetrations closed while core alterations were in progress as was required by the TS.

The finding was more than minor because it affected the configuration control, specifically containment boundary preservation, attribute associated with the Reactor Safety Barrier Integrity Cornerstone objective to provide reasonable assurance that physical barriers, specifically containment, protect the public from radionuclide releases caused by accidents or events. This finding was of very low safety significance because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; and (3) the issue did not degrade the licensee's ability to recover decay heat removal once lost. Furthermore, the issue only impacted the containment function without affecting core damage frequency, and was associated with a shutdown condition during periods when the reactor vessel water level was greater than or equal to the level required for fuel moves.

Inspection Report# : [2005003\(pdf\)](#)**G****Significance:** Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

EXCEEDING 100% LICENSED POWER FOLLOWING THE IMPLEMENTATION OF THE ULTRASONIC FEEDWATER FLOW MEASURING INSTRUMENTS.

A finding of very low safety significance and an associated NCV for operating in excess of the licensed thermal power limits was self-revealed. Specifically, it was determined that for periods between May 2000 and August 2003, the installed feedwater ultrasonic flow measurement instruments provided non-conservative data to the reactor power calculation which resulted in power operation greater than the licensed maximum thermal power output of 3586.6 megawatts thermal (100 percent power). Unit 1 operated with a maximum power level of 102.62 percent. Unit 2 operated with a maximum power level of 101.88 percent. This finding was related to the cross-cutting area of Problem Identification and Resolution (evaluation) because the licensee missed several opportunities to determine that an over power condition existed.

This finding was more than minor because it affected the Barrier Integrity Cornerstone objective of providing reasonable assurance that the physical design barrier of fuel cladding protect the public from radionuclide releases caused by accidents or events, and was associated with the attribute of design control (core design analysis). The finding was of very low safety significance because of the fuel cladding barrier was not degraded.

Inspection Report# : [2005003\(pdf\)](#)**G****Significance:** Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE ACCEPTANCE CRITERIA FOR FLOW TEST

A finding of very low safety significance was identified by the inspectors for a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." The acceptance criteria for the minimum service water flow through a reactor containment fan cooler (RCFC) as specified in 1/2BOSR 5.5.2-1, "Reactor Containment Fan Cooler Monthly Surveillance," was based on a higher system pressure than expected during the limiting design basis accident. Therefore, the licensee did not ensure that the TS required flow would be achieved at the lower pressure conditions. Once identified, the licensee performed an operability determination and concluded the fan coolers were operable. Additional actions including revising the procedures were being considered.

This issue was more than minor because reduced service water flow through the RCFC could impact the heat removal capability of the RCFCs. The issue was of very low safety significance because it did not represent a reduction in defense in depth with respect to the physical integrity of the reactor containment.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

INADEQUATE PROCEDURES ASSOCIATED WITH CALCULATING, REVIEWING AND APPROVING DILUTIONS 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\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Mar 31, 2005

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLOGICAL CONDITIONS PRIOR TO A SIGNIFICANT EQUIPMENT CONFIGURATION CHANGE.

One self-revealed finding of very low safety significance and an associated Non-Cited Violation was identified when, on March 12, 2005, the licensee failed to conduct an adequate evaluation of the radiological conditions prior to removing the charcoal adsorber portion of HEPA units associated with work on the Unit 1 steam generators. Subsequently, Unit 1 Containment radiological conditions changed such that several air monitors went into high alarm on the iodine channel and 28 personnel were found to have unintended, low-level, internal contamination.

The issue was more than minor because it was associated with the Human Performance attribute (a cross-cutting area) of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radioactive materials in that multiple workers received unintended dose from small intakes. In that the finding was no specifically related to ALARA or planning issues, there was no radiological overexposures, nor the substantial potential for an overexposure, and the licensee's ability to assess worker dose was not compromised, the finding was determined to be of very low safety significance. The licensee's corrective actions for this issue included reinstalling the charcoal adsorbers and initiating additional containment atmosphere treatment, revising procedures to include specific criteria for charcoal adsorber removal, and modifying the outage schedule such that charcoal adsorber removal is logically tied to steam generator manway installation. One Non-Cited Violation for the failure to adequately evaluate radiological conditions in accordance with 10 CFR 20.1501 was also identified.

Inspection Report# : [2005003\(pdf\)](#)

G

Significance: Mar 31, 2005

Identified By: Self Disclosing
Item Type: NCV NonCited Violation

FAILURE TO OBTAIN A RADIATION PROTECTION BRIEFING PRIOR TO AN ENTRY INTO A HIGH RADIATION AREA.

One self-revealed finding of very low safety significance and an associated NCV was identified when, on March 9, 2005, a contract radiation worker, while supporting polar crane movement of equipment used for the upper internals split pin modification, entered a High Radiation Area (HRA) without receiving a high radiation area brief from the radiation protection staff as required by the Radiation Work Permit.

The primary cause of this finding was related to the cross-cutting area of Human Performance (personnel). This issue was more than minor because it was associated with the Human Performance attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radioactive materials in that two barriers (i.e., the HRA briefing and compliance with the HRA posting) in place to prevent unplanned, unintended worker dose failed. In that the finding was no specifically related to ALARA or planning issues, there were no radiological overexposures, nor the substantial potential for an overexposure, and the licensee's ability to assess worker dose was not compromised, the finding was determined to be of very low safety significance. The licensee's corrective actions for this issue included enhancing the physical and administrative RP controls over HRAs within containment. One Non-Cited Violation for the failure to obtain a HRA briefing prior to entry into the area in accordance with licensee procedures and Technical Specification 5.4.1 was also identified.

Inspection Report# : [2005003\(pdf\)](#)

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Last modified : August 24, 2005

Byron 2

3Q/2005 Plant Inspection Findings

Initiating Events

G**Significance:** Jun 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow Severe Weather Procedure Results in Less than Required Essential Service Water Basin Level

A finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification (TS) 5.4.1 regarding procedure adherence was self revealed, when during a tornado watch, operators failed to maintain both essential service water basin levels greater than 90 percent as specified in the associated abnormal operating procedure. Upon recognizing the low level condition, operators restored basin level to greater than 90 percent. The primary cause of this violation was related to the cross-cutting area of Human Performance (personnel) because the operators failed to maintain the required basin level even though adequate guidance for maintaining basin level was provided in the associated procedure.

This finding was more than minor because the operators allowed the level to drop below the operating limit; which is similar to the more than minor examples of Section 2 of Appendix E to Inspection Manual Chapter (IMC) 0612. The finding was determined to be of very low safety significance because the condition did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

Inspection Report# : [2005004\(pdf\)](#)**G****Significance:** Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Insufficient Fire Seal Material in Penetration Between Emergency Diesel Generator Rooms and Associated Switchgear Rooms

The inspectors identified a finding of very low safety significance and associated NCV of the license number NPF-66 Section 2.E, requiring that the licensee shall implement and maintain in effect all provisions of the fire protection program as described in the licensee's Fire Protection Report. Specifically, during an inspection of the Division 21 electrical switchgear room the inspectors identified that a penetration that connected the Division 21 electrical switchgear room with the Unit 2 train A diesel generator had not been properly sealed as part of the 3-hour fire barrier. The licensee's extent of condition review identified two more penetrations in the Division 22 electrical switchgear room which also had not been properly sealed. Upon identification of the degraded penetrations, the licensee established the required compensatory fire watches until the penetrations were properly sealed.

This finding was considered more than minor, because it could be reasonably viewed as a precursor to a significant event, specifically a loss of Division 21 or 22 switchgear rooms with a fire in the Unit 2 train A or B diesel-generator rooms or loss of the Unit 2 train A or B diesel generator with a fire in the Division 21 or 22 switchgear rooms. The finding was determined to be of very low safety significance because the condition reflected a fire protection program element whose performance and reliability will be minimally impacted by the inspection finding. That is, if the fire occurred in the Division 21 switchgear room or Unit 2 train A diesel generator room, the fire would be confined in the two areas and the reliance on the Division 22 switchgear power is not effected.

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

Mitigating Systems

G**Significance:** Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

INADEQUATE CLEANING OF ESSENTIAL SERVICE WATER DIESEL FUEL OIL STORAGE TANKS.

A self-revealing NCV of Technical Specification 5.4.1a, "Procedures", was identified for Byron's inadequate cleaning procedure for the Essential Service Water (SX) make-up pump diesel fuel oil storage tanks. This resulted in each of the SX make-up pumps being inoperable for a period of approximately 60 days. Byron's inadequate SX fuel tank cleaning procedure is identified as a performance deficiency that is greater than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems to respond to an initiating event to prevent undesirable consequences. A contributing cause to the inadequate SX fuel tank cleaning is related to the Human Performance cross-cutting area. Procedures for diesel fuel oil tank cleaning and post maintenance testing lacked technical details to ensure that the SX make-up pumps were restored to an operable condition.

Inspection Report# : [2005009\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY REVIEW AND MAKE PROCEDURE CHANGES

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." After increasing the minimum required river screen house (RSH) temperature for securing a service water makeup pump from 50 degrees Fahrenheit to 70 degrees Fahrenheit in 1998, the licensee failed to revise two operating procedures. Once identified, the licensee reviewed other procedures and initiated procedure changes.

This issue was more than minor because the licensee failed to ensure that the procedures contained the necessary precautions and steps to ensure continued operability of the SX pumps. The issue was of very low safety significance because it did not represent the actual loss of safety function.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE RIVER SCREEN HOUSE (RSH) VENTILATION CALCULATION

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." A river screen house (RSH) ventilation calculation assumed that only one Essential Service Water (SX) makeup pump would be running and calculated the maximum ambient temperature of the RSH to be 115 degrees Fahrenheit. Licensee personnel failed to consider that two SX makeup pumps could be in operation for up to five hours into an event. Since two pumps could be running, the calculation underestimated the heat input into the RSH from the operating pumps. Once identified, the licensee immediately performed an operability determination and concluded that based on current ambient temperatures, the pumps were operable. Additional assessments will be completed prior to summer temperatures.

This issue was more than minor because exceeding the temperature ratings for components could impact the ability of the diesel-driven pump to perform its safety function. The issue was of very low safety significance because it did not represent an actual loss of a safety function.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

LACK OF HEAT EXCHANGER OVER PRESSURE PROTECTION

A finding of very low safety significance was identified by the inspectors for a Non-Cited Violation of 10 CFR 50.55a. The licensee did not ensure that the essential service water (SX) system contained pressure relief devices or had administrative controls to relieve excessive system pressure as required by Article ND-7110 of the American Society of Mechanical Engineers (ASME) Code, Section III. Once identified, the licensee immediately initiated actions to strengthen the administrative controls to prevent overpressure. This issue also impacted the cross-cutting aspect of problem identification and resolution because the licensee had opportunities to identify the condition in October 2003.

This issue was more than minor because failing to provide overpressure protection to the Unit 0 Component Cooling Heat Exchanger served by SX could result in inoperability of the component or diverted SX flow. The issue was of very low safety significance because it was not a design issue or an actual loss of the system's safety function.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

NON-SAFETY RELATED THERMOSTATS USED FOR AUXILIARY FEEDWATER PUMP ROOM COOLERS

A finding of very low safety significance was identified by the inspectors for a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The thermostats that control the essential service water (SX) system 1/2SX168 valves were non-safety related and their failure could affect the SX cooler flow to the diesel driven auxiliary feedwater (AFW) pump rooms. The original design review of the component classification failed to address all failure modes. Once identified, the licensee immediately performed an operability determination and based on engineering judgment, concluded that the valves were operable.

This issue was more than minor because failing to ensure proper room cooling could impact the function of temperature sensitive equipment and could result in inoperability of a diesel driven AFW pump. The issue was of very low safety significance because it was a design issue which did not result in loss of function per Generic Letter GL 91-18.

Inspection Report# : [2005002\(pdf\)](#)

Barrier Integrity

Significance:  Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FUEL HANDLING ERROR POTENTIALLY DAMAGES FUEL ASSEMBLY.

A Non-Cited Violation (NCV) of TS 5.4.1a, having very low safety significance was self-revealed. Specifically, a fuel handler moving new fuel in the spent fuel pool failed to unlatch the fuel assembly after being lowered into the designated storage position, potentially damaging the fuel assembly as the bridge crane was trolleyed with the fuel assembly partially inserted in its storage location. The inspectors determined that the failure to detach the fuel assembly from the fuel handling tool prior to raising the assembly approximately three feet and moving the spent fuel pool bridge crane hoist trolley was a performance deficiency. This performance deficiency warranted a significance evaluation in accordance with Inspection Manual Chapter (IMC) 0612 "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." The inspectors determined that the finding was more than minor because it is related to the human performance attribute of the barrier integrity cornerstone to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. A contributing cause to the fuel handling procedure violation is related to the Human Performance cross-cutting area. The operators failed to follow the procedure specified in OU-BY-204, "Fuel Handling Procedures in the Spent Fuel Pool for Byron", Revision 2.

Inspection Report# : [2005009\(pdf\)](#)

Significance:  Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CONTROL CONTAINMENT PENETRATIONS IN ACCORDANCE WITH TECHNICAL SPECIFICATION 3.9.4C DURING CORE ALTERATIONS.

A finding of very low safety significance and an associated NCV of TS 3.9.4c was identified by the NRC. Specifically, the inspectors determined that during the performance of local leak rate tests the licensee failed to maintain containment penetrations closed while core alterations were in progress as was required by the TS.

The finding was more than minor because it affected the configuration control, specifically containment boundary preservation, attribute associated with the Reactor Safety Barrier Integrity Cornerstone objective to provide reasonable assurance that physical barriers, specifically containment, protect the public from radionuclide releases caused by accidents or events. This finding was of very low safety significance because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; and (3) the issue did not degrade the licensee's ability to recover decay heat removal once lost. Furthermore, the issue only impacted the containment function without affecting core damage frequency, and was associated with a shutdown condition during periods when the reactor vessel water level was greater than or equal to the level required for fuel moves.

Inspection Report# : [2005003\(pdf\)](#)

Significance:  Mar 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

EXCEEDING 100% LICENSED POWER FOLLOWING THE IMPLEMENTATION OF THE ULTRASONIC FEEDWATER FLOW MEASURING INSTRUMENTS.

A finding of very low safety significance and an associated NCV for operating in excess of the licensed thermal power limits was self-revealed. Specifically, it was determined that for periods between May 2000 and August 2003, the installed feedwater ultrasonic flow measurement instruments provided non-conservative data to the reactor power calculation which resulted in power operation greater than the licensed maximum thermal power output of 3586.6 megawatts thermal (100 percent power). Unit 1 operated with a maximum power level of 102.62 percent. Unit 2 operated with a maximum power level of 101.88 percent. This finding was related to the cross-cutting area of Problem Identification and Resolution (evaluation) because the licensee missed several opportunities to determine that an over power condition existed.

This finding was more than minor because it affected the Barrier Integrity Cornerstone objective of providing reasonable assurance that the physical design barrier of fuel cladding protect the public from radionuclide releases caused by accidents or events, and was associated with the attribute of design control (core design analysis). The finding was of very low safety significance because of the fuel cladding barrier was not degraded.

Inspection Report# : [2005003\(pdf\)](#)

Significance:  Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE ACCEPTANCE CRITERIA FOR FLOW TEST

A finding of very low safety significance was identified by the inspectors for a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." The acceptance criteria for the minimum service water flow through a reactor containment fan cooler (RCFC) as specified in 1/2BOSR 5.5.2-1, "Reactor Containment Fan Cooler Monthly Surveillance," was based on a higher system pressure than expected during the limiting design basis accident. Therefore, the licensee did not ensure that the TS required flow would be achieved at the lower pressure conditions. Once identified, the licensee performed an operability determination and concluded the fan coolers were operable. Additional actions including revising the procedures were being considered.

This issue was more than minor because reduced service water flow through the RCFC could impact the heat removal capability of the RCFCs. The issue was of very low safety significance because it did not represent a reduction in defense in depth with respect to the physical integrity of the reactor containment.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Dec 31, 2004

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

INADEQUATE PROCEDURES ASSOCIATED WITH CALCULATING, REVIEWING AND APPROVING DILUTIONS 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\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Mar 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLOGICAL CONDITIONS PRIOR TO A SIGNIFICANT EQUIPMENT CONFIGURATION CHANGE.

One self-revealed finding of very low safety significance and an associated Non-Cited Violation was identified when, on March 12, 2005, the licensee failed to conduct an adequate evaluation of the radiological conditions prior to removing the charcoal adsorber portion of HEPA units associated with work on the Unit 1 steam generators. Subsequently, Unit 1 Containment radiological conditions changed such that several air monitors went into high alarm on the iodine channel and 28 personnel were found to have unintended, low-level, internal contamination.

The issue was more than minor because it was associated with the Human Performance attribute (a cross-cutting area) of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radioactive materials in that multiple workers received unintended dose from small intakes. In that the finding was no specifically related to ALARA or planning issues, there was no radiological overexposures, nor the substantial potential for an overexposure, and the licensee's ability to assess worker dose was not compromised, the finding was determined to be of very low safety significance. The licensee's corrective actions for this issue included reinstalling the charcoal adsorbers and initiating additional containment atmosphere treatment, revising procedures to include specific criteria for charcoal adsorber removal, and modifying the outage schedule such that charcoal adsorber removal is logically tied to steam generator manway installation. One Non-Cited Violation for the failure to adequately evaluate radiological conditions in accordance with 10 CFR 20.1501 was also identified.

Inspection Report# : [2005003\(pdf\)](#)

G

Significance: Mar 31, 2005

Identified By: Self-Revealing
Item Type: NCV NonCited Violation

FAILURE TO OBTAIN A RADIATION PROTECTION BRIEFING PRIOR TO AN ENTRY INTO A HIGH RADIATION AREA.

One self-revealed finding of very low safety significance and an associated NCV was identified when, on March 9, 2005, a contract radiation worker, while supporting polar crane movement of equipment used for the upper internals split pin modification, entered a High Radiation Area (HRA) without receiving a high radiation area brief from the radiation protection staff as required by the Radiation Work Permit.

The primary cause of this finding was related to the cross-cutting area of Human Performance (personnel). This issue was more than minor because it was associated with the Human Performance attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radioactive materials in that two barriers (i.e., the HRA briefing and compliance with the HRA posting) in place to prevent unplanned, unintended worker dose failed. In that the finding was not specifically related to ALARA or planning issues, there were no radiological overexposures, nor the substantial potential for an overexposure, and the licensee's ability to assess worker dose was not compromised, the finding was determined to be of very low safety significance. The licensee's corrective actions for this issue included enhancing the physical and administrative RP controls over HRAs within containment. One Non-Cited Violation for the failure to obtain a HRA briefing prior to entry into the area in accordance with licensee procedures and Technical Specification 5.4.1 was also identified.

Inspection Report# : [2005003\(pdf\)](#)

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Significance: N/A Jul 01, 2005

Identified By: NRC
Item Type: FIN Finding

PI&R INSPECTION SUMMARY

Overall, the team concluded that problems were being adequately identified, evaluated, and corrected. Issues captured in the corrective action program were appropriately screened and evaluated for root or apparent causes and workers generally expressed positive views about the program. However, the team identified two concerns that cut across all the functional areas (problem identification, evaluation and resolution) of the corrective actions program. Specifically, the team identified that plant staff were sometimes too focused on the specific process being implemented than on the overall program. There were several instances where issues were identified during cause or operability evaluations, but were not fed back into the corrective action program, because it was not a specific requirement of the evaluation process. The team also noted that industry experience, especially Braidwood station experience, was underutilized in identifying or evaluating issues. The Nuclear Oversight organization was considered intrusive and challenged corrective action program performance based on the numerous examples of assessment findings reviewed during the inspection. The team also observed that the station had reasonably addressed previously identified NRC issues, but noted that Nuclear Oversight had identified some concerns with the corrective actions for those issues identified during the 2003 NRC Problem Identification and Resolution inspection.

Inspection Report# : [2005008\(pdf\)](#)

Last modified : November 30, 2005

Byron 2

4Q/2005 Plant Inspection Findings

Initiating Events

G**Significance:** Dec 31, 2005

Identified By: Self-Revealing

Item Type: FIN Finding

FAILURE OF THE NEWLY INSTALLED DIGITAL ELECTROHYDRAULIC SYSTEM TO RESPOND TO OPERATOR'S INPUT TO INITIATE A TURBINE RUNBACK

A finding having very low safety significance (Green) was self-revealed when the newly installed Digital Electrohydraulic System (DEH) failed to respond to operator input to initiate a turbine runback that subsequently resulted in a reactor trip. The inspectors determined that the algorithm required for turbine runback was deleted from the software database due to a compiler fault. Modification review and testing performed by the licensee failed to discover the software error. To correct the problem the licensee reinstalled the deleted software algorithm into the DEH system.

The finding was more than minor because it affected the design control attribute of the Initiating Events cornerstone objective. The attribute objective limits the likelihood of those events that upset plant stability and challenge critical safety functions during at-power operations. Specifically, the lack of turbine runback capability contributed to a reactor trip from a feedwater system transient. The finding was determined to be of very low safety significance (Green), since it only contributed to the likelihood of a reactor trip. No violation of NRC requirements occurred.

Inspection Report# : [2005011\(pdf\)](#)**G****Significance:** Jun 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow Severe Weather Procedure Results in Less than Required Essential Service Water Basin Level

A finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification (TS) 5.4.1 regarding procedure adherence was self revealed, when during a tornado watch, operators failed to maintain both essential service water basin levels greater than 90 percent as specified in the associated abnormal operating procedure. Upon recognizing the low level condition, operators restored basin level to greater than 90 percent. The primary cause of this violation was related to the cross-cutting area of Human Performance (personnel) because the operators failed to maintain the required basin level even though adequate guidance for maintaining basin level was provided in the associated procedure.

This finding was more than minor because the operators allowed the level to drop below the operating limit; which is similar to the more than minor examples of Section 2 of Appendix E to Inspection Manual Chapter (IMC) 0612. The finding was determined to be of very low safety significance because the condition did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

Inspection Report# : [2005004\(pdf\)](#)**G****Significance:** Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Insufficient Fire Seal Material in Penetration Between Emergency Diesel Generator Rooms and Associated Switchgear Rooms

The inspectors identified a finding of very low safety significance and associated NCV of the license number NPF-66 Section 2.E, requiring that the licensee shall implement and maintain in effect all provisions of the fire protection program as described in the licensee's Fire Protection Report. Specifically, during an inspection of the Division 21 electrical switchgear room the inspectors identified that a penetration that connected the Division 21 electrical switchgear room with the Unit 2 train A diesel generator had not been properly sealed as part of the 3-hour fire barrier. The licensee's extent of condition review identified two more penetrations in the Division 22 electrical switchgear room which also had not been properly sealed. Upon identification of the degraded penetrations, the licensee established the required compensatory fire watches until the penetrations were properly sealed.

This finding was considered more than minor, because it could be reasonably viewed as a precursor to a significant event, specifically a loss of Division 21 or 22 switchgear rooms with a fire in the Unit 2 train A or B diesel-generator rooms or loss of the Unit 2 train A or B diesel generator with a fire in the Division 21 or 22 switchgear rooms. The finding was determined to be of very low safety significance because the condition reflected a fire protection program element whose performance and reliability will be minimally impacted by the inspection finding. That is, if the fire occurred in the Division 21 switchgear room or Unit 2 train A diesel generator room, the fire would be confined in the two areas and the reliance on the Division 22 switchgear power is not effected.

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

Mitigating Systems

G**Significance:** Dec 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILED TO PERFORM VT-2 EXAMINATION AT NOMINAL OPERATING PRESSURE FOR SIX NEW RHR SYSTEM WELDS

The inspectors identified a finding involving a Non-Cited Violation (NCV) of 10 CFR Part 50.55a(g)(4)ii having very low safety significance for failure to perform a VT-2 examination at nominal operating pressure for six new residual heat removal system welds that were returned to service. This finding was entered into the licensee's corrective action program.

This finding was more than minor significance because the licensee returned these six welds to service without completing the required pressure test and VT-2 examination, which placed this system at increased risk for undetected leakage and component failure. Operation of this system with improperly tested piping affected the mitigating systems cornerstone objective of equipment reliability. This finding was of very low safety significance because the required test and VT-2 examination were subsequently completed and all welds passed. The finding was not suitable for a significance determination process evaluation. This finding has been reviewed by NRC Management and has been determined to be a Green finding of very low safety significance.

Inspection Report# : [2005011\(pdf\)](#)**G****Significance:** Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

INADEQUATE CLEANING OF ESSENTIAL SERVICE WATER DIESEL FUEL OIL STORAGE TANKS.

A self-revealing NCV of Technical Specification 5.4.1a, "Procedures", was identified for Byron's inadequate cleaning procedure for the Essential Service Water (SX) make-up pump diesel fuel oil storage tanks. This resulted in each of the SX make-up pumps being inoperable for a period of approximately 60 days. Byron's inadequate SX fuel tank cleaning procedure is identified as a performance deficiency that is greater than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems to respond to an initiating event to prevent undesirable consequences. A contributing cause to the inadequate SX fuel tank cleaning is related to the Human Performance cross-cutting area. Procedures for diesel fuel oil tank cleaning and post maintenance testing lacked technical details to ensure that the SX make-up pumps were restored to an operable condition.

Inspection Report# : [2005009\(pdf\)](#)**G****Significance:** Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY REVIEW AND MAKE PROCEDURE CHANGES

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." After increasing the minimum required river screen house (RSH) temperature for securing a service water makeup pump from 50 degrees Fahrenheit to 70 degrees Fahrenheit in 1998, the licensee failed to revise two operating procedures. Once identified, the licensee reviewed other procedures and initiated procedure changes.

This issue was more than minor because the licensee failed to ensure that the procedures contained the necessary precautions and steps to ensure continued operability of the SX pumps. The issue was of very low safety significance because it did not represent the actual loss of safety function.

Inspection Report# : [2005002\(pdf\)](#)**G****Significance:** Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE RIVER SCREEN HOUSE (RSH) VENTILATION CALCULATION

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." A river screen house (RSH) ventilation calculation assumed that only one Essential Service Water (SX) makeup pump would be running and calculated the maximum ambient temperature of the RSH to be 115 degrees Fahrenheit. Licensee personnel failed to consider that two SX makeup pumps could be in operation for up to five hours into an event. Since two pumps could be running, the calculation underestimated the heat input into the RSH from the operating pumps. Once identified, the licensee immediately performed an operability determination and concluded that based on current ambient temperatures, the pumps were operable. Additional assessments will be completed prior to summer temperatures.

This issue was more than minor because exceeding the temperature ratings for components could impact the ability of the diesel-driven pump to perform its safety function. The issue was of very low safety significance because it did not represent an actual loss of a safety function.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

LACK OF HEAT EXCHANGER OVER PRESSURE PROTECTION

A finding of very low safety significance was identified by the inspectors for a Non-Cited Violation of 10 CFR 50.55a. The licensee did not ensure that the essential service water (SX) system contained pressure relief devices or had administrative controls to relieve excessive system pressure as required by Article ND-7110 of the American Society of Mechanical Engineers (ASME) Code, Section III. Once identified, the licensee immediately initiated actions to strengthen the administrative controls to prevent overpressure. This issue also impacted the cross-cutting aspect of problem identification and resolution because the licensee had opportunities to identify the condition in October 2003.

This issue was more than minor because failing to provide overpressure protection to the Unit 0 Component Cooling Heat Exchanger served by SX could result in inoperability of the component or diverted SX flow. The issue was of very low safety significance because it was not a design issue or an actual loss of the system's safety function.

Inspection Report# : [2005002\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

NON-SAFETY RELATED THERMOSTATS USED FOR AUXILIARY FEEDWATER PUMP ROOM COOLERS

A finding of very low safety significance was identified by the inspectors for a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The thermostats that control the essential service water (SX) system 1/2SX168 valves were non-safety related and their failure could affect the SX cooler flow to the diesel driven auxiliary feedwater (AFW) pump rooms. The original design review of the component classification failed to address all failure modes. Once identified, the licensee immediately performed an operability determination and based on engineering judgment, concluded that the valves were operable.

This issue was more than minor because failing to ensure proper room cooling could impact the function of temperature sensitive equipment and could result in inoperability of a diesel driven AFW pump. The issue was of very low safety significance because it was a design issue which did not result in loss of function per Generic Letter GL 91-18.

Inspection Report# : [2005002\(pdf\)](#)

Barrier Integrity

G

Significance: Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FUEL HANDLING ERROR POTENTIALLY DAMAGES FUEL ASSEMBLY.

A Non-Cited Violation (NCV) of TS 5.4.1a, having very low safety significance was self-revealed. Specifically, a fuel handler moving new fuel in the spent fuel pool failed to unlatch the fuel assembly after being lowered into the designated storage position, potentially damaging the fuel assembly as the bridge crane was trolleyed with the fuel assembly partially inserted in its storage location. The inspectors determined that the failure to detach the fuel assembly from the fuel handling tool prior to raising the assembly approximately three feet and moving the spent fuel pool bridge crane hoist trolley was a performance deficiency. This performance deficiency warranted a significance evaluation in accordance with Inspection Manual Chapter (IMC) 0612 "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." The inspectors determined that the finding was more than minor because it is related to the human performance attribute of the barrier integrity cornerstone to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. A contributing cause to the fuel handling procedure violation is related to the Human Performance cross-cutting area. The operators failed to follow the procedure specified in OU-BY-204, "Fuel Handling Procedures in the Spent Fuel Pool for Byron", Revision 2.

Inspection Report# : [2005009\(pdf\)](#)

Significance: SL-III Jun 30, 2005

Identified By: NRC

Item Type: VIO Violation

Review of Missed Ventilation And Filtration System Technical Specification Surveillance Requirements

On January 13, 2005, during a Nuclear Oversight Audit, the licensee identified that 15 Technical Specifications required ventilation surveillance tests were not performed. The licensee's subsequent root cause evaluation and investigation determined that the missed

surveillance tests were due to willful falsification of documents by a non-licensed employee. The licensee's associated extent of condition review identified 12 additional TS required ventilation surveillance tests that were also falsified. Upon performing the 27 falsified surveillance requirements, six failed. The NRC determined that this issue was a violation of Byron Station Technical Specifications. By providing false information regarding the surveillances, the non-licensed employee also caused the licensee to be in violation of 10 CFR 50.9, "Completeness and Accuracy of Information. In addition, the activities of the employee also placed himself in violation of 10 CFR 50.5, "Deliberate Misconduct." The enforcement aspects of this issue were described in the Notice of Violation EA-05-159, "Byron Station - Notice of Violation [NRC Office of Investigations Report No. 3-2005-008," from James L. Caldwell to Christopher M. Crane, dated October 27, 2005. This URI is closed.

Inspection Report# : [2005011\(pdf\)](#)

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

G

Significance: Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CONTROL CONTAINMENT PENETRATIONS IN ACCORDANCE WITH TECHNICAL SPECIFICATION 3.9.4C DURING CORE ALTERATIONS.

A finding of very low safety significance and an associated NCV of TS 3.9.4c was identified by the NRC. Specifically, the inspectors determined that during the performance of local leak rate tests the licensee failed to maintain containment penetrations closed while core alterations were in progress as was required by the TS.

The finding was more than minor because it affected the configuration control, specifically containment boundary preservation, attribute associated with the Reactor Safety Barrier Integrity Cornerstone objective to provide reasonable assurance that physical barriers, specifically containment, protect the public from radionuclide releases caused by accidents or events. This finding was of very low safety significance because (1) the issue did not increase the likelihood of a loss of primary coolant system inventory; (2) the issue did not degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; and (3) the issue did not degrade the licensee's ability to recover decay heat removal once lost. Furthermore, the issue only impacted the containment function without affecting core damage frequency, and was associated with a shutdown condition during periods when the reactor vessel water level was greater than or equal to the level required for fuel moves.

Inspection Report# : [2005003\(pdf\)](#)

G

Significance: Mar 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

EXCEEDING 100% LICENSED POWER FOLLOWING THE IMPLEMENTATION OF THE ULTRASONIC FEEDWATER FLOW MEASURING INSTRUMENTS.

A finding of very low safety significance and an associated NCV for operating in excess of the licensed thermal power limits was self-revealed. Specifically, it was determined that for periods between May 2000 and August 2003, the installed feedwater ultrasonic flow measurement instruments provided non-conservative data to the reactor power calculation which resulted in power operation greater than the licensed maximum thermal power output of 3586.6 megawatts thermal (100 percent power). Unit 1 operated with a maximum power level of 102.62 percent. Unit 2 operated with a maximum power level of 101.88 percent. This finding was related to the cross-cutting area of Problem Identification and Resolution (evaluation) because the licensee missed several opportunities to determine that an over power condition existed.

This finding was more than minor because it affected the Barrier Integrity Cornerstone objective of providing reasonable assurance that the physical design barrier of fuel cladding protect the public from radionuclide releases caused by accidents or events, and was associated with the attribute of design control (core design analysis). The finding was of very low safety significance because of the fuel cladding barrier was no degraded.

Inspection Report# : [2005003\(pdf\)](#)

G

Significance: Feb 11, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE ACCEPTANCE CRITERIA FOR FLOW TEST

A finding of very low safety significance was identified by the inspectors for a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." The acceptance criteria for the minimum service water flow through a reactor containment fan cooler (RCFC) as specified in 1/2BOSR 5.5.2-1, "Reactor Containment Fan Cooler Monthly Surveillance," was based on a higher system pressure than expected during the limiting design basis accident. Therefore, the licensee did not ensure that the TS required flow would be achieved at the lower pressure conditions. Once identified, the licensee performed an operability determination and concluded the fan coolers were operable. Additional actions including revising the procedures were being considered.

This issue was more than minor because reduced service water flow through the RCFC could impact the heat removal capability of the RCFCs. The issue was of very low safety significance because it did not represent a reduction in defense in depth with respect to the physical integrity of the reactor containment.

Inspection Report# : [2005002\(pdf\)](#)

Emergency Preparedness

Significance: SL-IV Dec 31, 2005

Identified By: NRC

Item Type: VIO Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR CHANGE TO AN EAL THAT DECREASED THE EFFECTIVENESS OF THE EMERGENCY PLAN

The inspectors identified that the licensee had changed its standard emergency action level (EAL) scheme by revising one EAL's criteria for an Unusual Event declaration that addressed an unplanned radiological release in excess of effluent radiation monitor readings unless the release could be determined to be below Offsite Dose Calculation Manual limits within 15 minutes for releases that could not be terminated in 60 minutes or less. The inspectors determined that this EAL change decreased the effectiveness of the emergency plan, and that the licensee did not obtain prior NRC approval for this change, contrary to the requirements of 10 CFR 50.54(q). The licensee is evaluating the options to correct the EAL.

Because the issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process as specified in Section IV.A.3 of the Enforcement Policy. According to Supplement VIII of the Enforcement Policy, this finding was determined to be a Severity Level IV because it involved a failure to meet a requirement not directly related to assessment and notification. Further, this problem was isolated to one EAL and was not indicative of a functional problem with the EAL scheme. Additionally, because the violation was a Severity Level IV and the licensee entered this issue into its corrective action program this finding is being treated as a Severity Level IV Non-Cited Violation of 10 CFR 50.54(q).

Inspection Report# : [2005011\(pdf\)](#)

Occupational Radiation Safety

Significance:  Mar 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLOGICAL CONDITIONS PRIOR TO A SIGNIFICANT EQUIPMENT CONFIGURATION CHANGE.

One self-revealed finding of very low safety significance and an associated Non-Cited Violation was identified when, on March 12, 2005, the licensee failed to conduct an adequate evaluation of the radiological conditions prior to removing the charcoal adsorber portion of HEPA units associated with work on the Unit 1 steam generators. Subsequently, Unit 1 Containment radiological conditions changed such that several air monitors went into high alarm on the iodine channel and 28 personnel were found to have unintended, low-level, internal contamination.

The issue was more than minor because it was associated with the Human Performance attribute (a cross-cutting area) of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radioactive materials in that multiple workers received unintended dose from small intakes. In that the finding was no specifically related to ALARA or planning issues, there was no radiological overexposures, nor the substantial potential for an overexposure, and the licensee's ability to assess worker dose was not compromised, the finding was determined to be of very low safety significance. The licensee's corrective actions for this issue included reinstalling the charcoal adsorbers and initiating additional containment atmosphere treatment, revising procedures to include specific criteria for charcoal adsorber removal, and modifying the outage schedule such that charcoal adsorber removal is logically tied to steam generator manway installation. One Non-Cited Violation for the failure to adequately evaluate radiological conditions in accordance with 10 CFR 20.1501 was also identified.

Inspection Report# : [2005003\(pdf\)](#)

Significance:  Mar 31, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO OBTAIN A RADIATION PROTECTION BRIEFING PRIOR TO AN ENTRY INTO A HIGH RADIATION AREA.

One self-revealed finding of very low safety significance and an associated NCV was identified when, on March 9, 2005, a contract radiation worker, while supporting polar crane movement of equipment used for the upper internals split pin modification, entered a High Radiation Area (HRA) without receiving a high radiation area brief from the radiation protection staff as required by the Radiation Work Permit.

The primary cause of this finding was related to the cross-cutting area of Human Performance (personnel). This issue was more than minor because it was associated with the Human Performance attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radioactive materials in that two barriers (i.e., the HRA briefing and compliance with the HRA posting) in place to prevent unplanned, unintended worker dose failed. In that the finding was no specifically related to ALARA or planning issues, there were no radiological overexposures, nor the substantial potential for an overexposure,

and the licensee's ability to assess worker dose was not compromised, the finding was determined to be of very low safety significance. The licensee's corrective actions for this issue included enhancing the physical and administrative RP controls over HRAs within containment. One Non-Cited Violation for the failure to obtain a HRA briefing prior to entry into the area in accordance with licensee procedures and Technical Specification 5.4.1 was also identified.

Inspection Report# : [2005003\(pdf\)](#)

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Significance: N/A Jul 01, 2005

Identified By: NRC

Item Type: FIN Finding

PI&R INSPECTION SUMMARY

Overall, the team concluded that problems were being adequately identified, evaluated, and corrected. Issues captured in the corrective action program were appropriately screened and evaluated for root or apparent causes and workers generally expressed positive views about the program. However, the team identified two concerns that cut across all the functional areas (problem identification, evaluation and resolution) of the corrective actions program. Specifically, the team identified that plant staff were sometimes too focused on the specific process being implemented than on the overall program. There were several instances where issues were identified during cause or operability evaluations, but were not fed back into the corrective action program, because it was not a specific requirement of the evaluation process. The team also noted that industry experience, especially Braidwood station experience, was underutilized in identifying or evaluating issues. The Nuclear Oversight organization was considered intrusive and challenged corrective action program performance based on the numerous examples of assessment findings reviewed during the inspection. The team also observed that the station had reasonably addressed previously identified NRC issues, but noted that Nuclear Oversight had identified some concerns with the corrective actions for those issues identified during the 2003 NRC Problem Identification and Resolution inspection.

Inspection Report# : [2005008\(pdf\)](#)

Last modified : March 03, 2006

Byron 2

1Q/2006 Plant Inspection Findings

Initiating Events

Significance: **G** Dec 31, 2005

Identified By: Self-Revealing

Item Type: FIN Finding

FAILURE OF THE NEWLY INSTALLED DIGITAL ELECTROHYDRAULIC SYSTEM TO RESPOND TO OPERATOR'S INPUT TO INITIATE A TURBINE RUNBACK

A finding having very low safety significance (Green) was self-revealed when the newly installed Digital Electrohydraulic System (DEH) failed to respond to operator input to initiate a turbine runback that subsequently resulted in a reactor trip. The inspectors determined that the algorithm required for turbine runback was deleted from the software database due to a compiler fault. Modification review and testing performed by the licensee failed to discover the software error. To correct the problem the licensee reinstalled the deleted software algorithm into the DEH system.

The finding was more than minor because it affected the design control attribute of the Initiating Events cornerstone objective. The attribute objective limits the likelihood of those events that upset plant stability and challenge critical safety functions during at-power operations. Specifically, the lack of turbine runback capability contributed to a reactor trip from a feedwater system transient. The finding was determined to be of very low safety significance (Green), since it only contributed to the likelihood of a reactor trip. No violation of NRC requirements occurred.

Inspection Report# : [2005011\(pdf\)](#)

Significance: **G** Jun 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow Severe Weather Procedure Results in Less than Required Essential Service Water Basin Level

A finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification (TS) 5.4.1 regarding procedure adherence was self revealed, when during a tornado watch, operators failed to maintain both essential service water basin levels greater than 90 percent as specified in the associated abnormal operating procedure. Upon recognizing the low level condition, operators restored basin level to greater than 90 percent. The primary cause of this violation was related to the cross-cutting area of Human Performance (personnel) because the operators failed to maintain the required basin level even though adequate guidance for maintaining basin level was provided in the associated procedure.

This finding was more than minor because the operators allowed the level to drop below the operating limit; which is similar to the more than minor examples of Section 2 of Appendix E to Inspection Manual Chapter (IMC) 0612. The finding was determined to be of very low safety significance because the condition did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

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

Significance: **G** Jun 30, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Insufficient Fire Seal Material in Penetration Between Emergency Diesel Generator Rooms and Associated Switchgear Rooms

The inspectors identified a finding of very low safety significance and associated NCV of the license number NPF-66 Section 2.E, requiring that the licensee shall implement and maintain in effect all provisions of the fire protection program as described in the licensee's Fire Protection Report. Specifically, during an inspection of the Division 21 electrical switchgear room the inspectors identified that a penetration that connected the Division 21 electrical switchgear room with the Unit 2 train A diesel generator had not been properly sealed as part of the 3-hour fire barrier. The licensee's extent of condition review identified two more penetrations in the Division 22 electrical switchgear room which also had not been properly sealed. Upon identification of the degraded penetrations, the licensee established the required compensatory fire watches until the penetrations were properly sealed.

This finding was considered more than minor, because it could be reasonably viewed as a precursor to a significant event, specifically a loss of Division 21 or 22 switchgear rooms with a fire in the Unit 2 train A or B diesel-generator rooms or loss of the Unit 2 train A or B diesel generator with a fire in the Division 21 or 22 switchgear rooms. The finding was determined to be of very low safety significance because the condition reflected a fire protection program element whose performance and reliability will be minimally impacted by the inspection finding. That is, if the fire occurred in the Division 21 switchgear room or Unit 2 train A diesel generator room, the fire would be confined in the two areas and the reliance on the Division 22 switchgear power is not effected.

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

Mitigating Systems

G**Significance:** Mar 24, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Translate Design Basis Into Procedures for Service Water Flow to the CC Heat Exchangers

The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance for the licensee's failure to correctly translate the design basis into procedures. Specifically, the licensee failed to update operator rounds to verify the revised design basis minimum value for essential service water flow to the component cooling water (CC) heat exchangers. In addition, because the operator rounds were not revised, the design basis minimum flow value was not bounded by the emergency operating procedure used for establishing initial cold leg recirculation in the event of a loss of coolant accident (LOCA). This issue was entered into the licensee's corrective action program to revise the operator rounds.

The issue was more than minor because it was associated with the Mitigating System cornerstone attribute of "Design Control," and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to have operator rounds verify the design basis minimum service water flow or to have the emergency operating procedures ensure the minimum flow prior to establishing initial cold leg recirculation in the event of a LOCA could potentially have allowed the service water flow to be less than the required value to maintain the design heat load during post LOCA conditions. This finding was of very low safety significance because it screened out as Green using the SDP Phase 1 worksheet. Even though the licensee did not control their bounding design basis service water flow procedurally, the flow to the CC heat exchangers has historically been well above the bounding design basis flow.

Inspection Report# : [2006006\(pdf\)](#)**G****Significance:** Mar 24, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Reduction of Fire Suppression Capacity and Capability

The inspectors identified a Non-Cited Violation of 10 CFR 50.48(a)(1) having very low safety significance for the licensee's failure to provide fire fighting systems of appropriate capacity and capability to minimize the adverse effects of fires on structures, systems, and components important to safety. Specifically, the licensee abandoned standpipes and manual hose stations located near safety-related equipment (essential service water makeup pumps) which reduced the fire suppression capacity and capability to protect such equipment. In addition, the site relied on a local fire department instead of the site fire brigade to manually suppress a fire that could have affected safety-related equipment. This issue was entered into the licensee's corrective action program, and compensatory measures were taken to place dry chemical fire extinguishers in the vicinity of the fire area to take the place of the abandoned manual fire hose stations.

This finding was considered more than minor because it was associated with the Mitigating System cornerstone attribute of "Protection Against External Factors," and affected the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, removing the manual hose stations reduced the fire suppression capacity and capability for protecting the emergency service water cooling tower makeup pumps and their diesels in the event of a fire. This finding was determined to be of very low safety significance (Green) based on a Phase 3 SDP evaluation.

Inspection Report# : [2006006\(pdf\)](#)**G****Significance:** Dec 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILED TO PERFORM VT-2 EXAMINATION AT NOMINAL OPERATING PRESSURE FOR SIX NEW RHR SYSTEM WELDS

The inspectors identified a finding involving a Non-Cited Violation (NCV) of 10 CFR Part 50.55a(g)(4)ii having very low safety significance for failure to perform a VT-2 examination at nominal operating pressure for six new residual heat removal system welds that were returned to service. This finding was entered into the licensee's corrective action program.

This finding was more than minor significance because the licensee returned these six welds to service without completing the required pressure test and VT-2 examination, which placed this system at increased risk for undetected leakage and component failure. Operation of this system with improperly tested piping affected the mitigating systems cornerstone objective of equipment reliability. This finding was of very low safety significance because the required test and VT-2 examination were subsequently completed and all welds passed. The finding was not suitable for a significance determination process evaluation. This finding has been reviewed by NRC Management and has been determined to be a Green finding of very low safety significance.

Inspection Report# : [2005011\(pdf\)](#)

Significance: **G** Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

INADEQUATE CLEANING OF ESSENTIAL SERVICE WATER DIESEL FUEL OIL STORAGE TANKS.

A self-revealing NCV of Technical Specification 5.4.1a, "Procedures", was identified for Byron's inadequate cleaning procedure for the Essential Service Water (SX) make-up pump diesel fuel oil storage tanks. This resulted in each of the SX make-up pumps being inoperable for a period of approximately 60 days. Byron's inadequate SX fuel tank cleaning procedure is identified as a performance deficiency that is greater than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems to respond to an initiating event to prevent undesirable consequences. A contributing cause to the inadequate SX fuel tank cleaning is related to the Human Performance cross-cutting area. Procedures for diesel fuel oil tank cleaning and post maintenance testing lacked technical details to ensure that the SX make-up pumps were restored to an operable condition.

Inspection Report# : [2005009\(pdf\)](#)

Barrier Integrity

Significance: **G** Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

DEGRADED INCORRECT PLANT BARRIER IMPAIRMENT EVALUATION RESULTED IN AN AUXILIARY BUILDING INTEGRITY

A finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification 5.4.1, regarding procedure adherence was inspector identified when the inspectors identified that ventilation barrier requirements were not being met during a routine assessment of work activities in the Unit 2 containment spray pump rooms. Upon identification, the licensee restored the barrier. The primary cause of this violation was related to the cross-cutting area of Human Performance.

This finding was more than minor because it affected the barrier integrity objective to provide reasonable assurance that the physical design barriers to protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance because the issue only represented a degradation of the radiological barrier function provided for the auxiliary building.

Inspection Report# : [2006002\(pdf\)](#)

Significance: **G** Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FUEL HANDLING ERROR POTENTIALLY DAMAGES FUEL ASSEMBLY.

A Non-Cited Violation (NCV) of TS 5.4.1a, having very low safety significance was self-revealed. Specifically, a fuel handler moving new fuel in the spent fuel pool failed to unlatch the fuel assembly after being lowered into the designated storage position, potentially damaging the fuel assembly as the bridge crane was trolleyed with the fuel assembly partially inserted in its storage location. The inspectors determined that the failure to detach the fuel assembly from the fuel handling tool prior to raising the assembly approximately three feet and moving the spent fuel pool bridge crane hoist trolley was a performance deficiency. This performance deficiency warranted a significance evaluation in accordance with Inspection Manual Chapter (IMC) 0612 "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." The inspectors determined that the finding was more than minor because it is related to the human performance attribute of the barrier integrity cornerstone to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. A contributing cause to the fuel handling procedure violation is related to the Human Performance cross-cutting area. The operators failed to follow the procedure specified in OU-BY-204, "Fuel Handling Procedures in the Spent Fuel Pool for Byron", Revision 2.

Inspection Report# : [2005009\(pdf\)](#)

Significance: **SL-III** Jun 30, 2005

Identified By: NRC

Item Type: VIO Violation

Review of Missed Ventilation And Filtration System Technical Specification Surveillance Requirements

On January 13, 2005, during a Nuclear Oversight Audit, the licensee identified that 15 Technical Specifications required ventilation surveillance tests were not performed. The licensee's subsequent root cause evaluation and investigation determined that the missed surveillance tests were due to willful falsification of documents by a non-licensed employee. The licensee's associated extent of condition review identified 12 additional TS required ventilation surveillance tests that were also falsified. Upon performing the 27 falsified surveillance requirements, six failed. The NRC determined that this issue was a violation of Byron Station Technical Specifications. By providing false information regarding the surveillances, the non-licensed employee also caused the licensee to be in violation of 10 CFR 50.9, "Completeness and Accuracy of Information. In addition, the activities of the employee also placed himself in violation of 10 CFR 50.5, "Deliberate Misconduct." The enforcement aspects of this issue were described in the Notice of Violation EA-05-159, "Byron Station - Notice of Violation [NRC Office of Investigations Report No. 3-2005-008," from James L. Caldwell to Christopher M. Crane, dated October 27, 2005. This URI is closed.

Inspection Report# : [2005011\(pdf\)](#)Inspection Report# : [2005004\(pdf\)](#)

Emergency Preparedness

Significance: SL-IV Dec 31, 2005

Identified By: NRC

Item Type: VIO Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR CHANGE TO AN EAL THAT DECREASED THE EFFECTIVENESS OF THE EMERGENCY PLAN

The inspectors identified that the licensee had changed its standard emergency action level (EAL) scheme by revising one EAL's criteria for an Unusual Event declaration that addressed an unplanned radiological release in excess of effluent radiation monitor readings unless the release could be determined to be below Offsite Dose Calculation Manual limits within 15 minutes for releases that could not be terminated in 60 minutes or less. The inspectors determined that this EAL change decreased the effectiveness of the emergency plan, and that the licensee did not obtain prior NRC approval for this change, contrary to the requirements of 10 CFR 50.54(q). The licensee is evaluating the options to correct the EAL.

Because the issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process as specified in Section IV.A.3 of the Enforcement Policy. According to Supplement VIII of the Enforcement Policy, this finding was determined to be a Severity Level IV because it involved a failure to meet a requirement not directly related to assessment and notification. Further, this problem was isolated to one EAL and was not indicative of a functional problem with the EAL scheme. Additionally, because the violation was a Severity Level IV and the licensee entered this issue into its corrective action program this finding is being treated as a Severity Level IV Non-Cited Violation of 10 CFR 50.54(q).

Inspection Report# : [2005011\(pdf\)](#)

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Significance: N/A Jul 01, 2005

Identified By: NRC

Item Type: FIN Finding

PI&R INSPECTION SUMMARY

Overall, the team concluded that problems were being adequately identified, evaluated, and corrected. Issues captured in the corrective action program were appropriately screened and evaluated for root or apparent causes and workers generally expressed positive views about the program. However, the team identified two concerns that cut across all the functional areas (problem identification, evaluation and resolution) of the corrective actions program. Specifically, the team identified that plant staff were sometimes too focused on the specific process being implemented than on the overall program. There were several instances where issues were identified during cause or operability evaluations, but were not fed back into the corrective action program, because it was not a specific requirement of the evaluation process. The team also noted that industry experience, especially Braidwood station experience, was underutilized in identifying or evaluating issues. The Nuclear Oversight organization was considered intrusive and challenged corrective action program performance based on the numerous examples of assessment findings reviewed during the inspection. The team also observed that the station had reasonably addressed previously identified NRC issues, but noted that Nuclear Oversight had identified some concerns with the corrective actions for those issues identified during the 2003 NRC Problem Identification and Resolution inspection.

Inspection Report# : [2005008\(pdf\)](#)

Last modified : May 25, 2006

Byron 2

2Q/2006 Plant Inspection Findings

Initiating Events

G**Significance:** Dec 31, 2005

Identified By: Self-Revealing

Item Type: FIN Finding

FAILURE OF THE NEWLY INSTALLED DIGITAL ELECTROHYDRAULIC SYSTEM TO RESPOND TO OPERATOR'S INPUT TO INITIATE A TURBINE RUNBACK

A finding having very low safety significance (Green) was self-revealed when the newly installed Digital Electrohydraulic System (DEH) failed to respond to operator input to initiate a turbine runback that subsequently resulted in a reactor trip. The inspectors determined that the algorithm required for turbine runback was deleted from the software database due to a compiler fault. Modification review and testing performed by the licensee failed to discover the software error. To correct the problem the licensee reinstalled the deleted software algorithm into the DEH system.

The finding was more than minor because it affected the design control attribute of the Initiating Events cornerstone objective. The attribute objective limits the likelihood of those events that upset plant stability and challenge critical safety functions during at-power operations. Specifically, the lack of turbine runback capability contributed to a reactor trip from a feedwater system transient. The finding was determined to be of very low safety significance (Green), since it only contributed to the likelihood of a reactor trip. No violation of NRC requirements occurred. Inspection Report# : [2005011\(pdf\)](#)

Mitigating Systems

G**Significance:** Mar 24, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Translate Design Basis Into Procedures for Service Water Flow to the CC Heat Exchangers

The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance for the licensee's failure to correctly translate the design basis into procedures. Specifically, the licensee failed to update operator rounds to verify the revised design basis minimum value for essential service water flow to the component cooling water (CC) heat exchangers. In addition, because the operator rounds were not revised, the design basis minimum flow value was not bounded by the emergency operating procedure used for establishing initial cold leg recirculation in the event of a loss of coolant accident (LOCA). This issue was entered into the licensee's corrective action program to revise the operator rounds.

The issue was more than minor because it was associated with the Mitigating System cornerstone attribute of "Design Control," and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to have operator rounds verify the design basis minimum service water flow or to have the emergency operating procedures ensure the minimum flow prior to establishing initial cold leg recirculation in the event of a LOCA could potentially have allowed the service water flow to be less than the required value to maintain the design heat load during post LOCA conditions. This finding was of very low safety significance because it screened out as Green using the SDP Phase 1 worksheet. Even though the licensee did not control their bounding design basis service water flow procedurally, the flow to the CC heat exchangers has historically been well above the bounding design basis flow. Inspection Report# : [2006006\(pdf\)](#)

G**Significance:** Mar 24, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Reduction of Fire Suppression Capacity and Capability

The inspectors identified a Non-Cited Violation of 10 CFR 50.48(a)(1) having very low safety significance for the licensee's failure to provide fire fighting systems of appropriate capacity and capability to minimize the adverse effects of fires on structures, systems, and components important to safety. Specifically, the licensee abandoned standpipes and manual hose stations located near safety-related equipment (essential service water makeup pumps) which reduced the fire suppression capacity and capability to protect such equipment. In addition, the site relied on a local fire department instead of the site fire brigade to manually suppress a fire that could have affected safety-related equipment. This issue was entered into the licensee's corrective action program, and compensatory measures were taken to place dry chemical fire extinguishers in the vicinity of the fire area to take the place of the abandoned manual fire hose stations.

This finding was considered more than minor because it was associated with the Mitigating System cornerstone attribute of "Protection Against

External Factors,” and affected the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, removing the manual hose stations reduced the fire suppression capacity and capability for protecting the emergency service water cooling tower makeup pumps and their diesels in the event of a fire. This finding was determined to be of very low safety significance (Green) based on a Phase 3 SDP evaluation.

Inspection Report# : [2006006\(pdf\)](#)



Significance: Dec 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILED TO PERFORM VT-2 EXAMINATION AT NOMINAL OPERATING PRESSURE FOR SIX NEW RHR SYSTEM WELDS

The inspectors identified a finding involving a Non-Cited Violation (NCV) of 10 CFR Part 50.55a(g)(4)ii having very low safety significance for failure to perform a VT-2 examination at nominal operating pressure for six new residual heat removal system welds that were returned to service. This finding was entered into the licensee's corrective action program.

This finding was more than minor significance because the licensee returned these six welds to service without completing the required pressure test and VT-2 examination, which placed this system at increased risk for undetected leakage and component failure. Operation of this system with improperly tested piping affected the mitigating systems cornerstone objective of equipment reliability. This finding was of very low safety significance because the required test and VT-2 examination were subsequently completed and all welds passed. The finding was not suitable for a significance determination process evaluation. This finding has been reviewed by NRC Management and has been determined to be a Green finding of very low safety significance.

Inspection Report# : [2005011\(pdf\)](#)



Significance: Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

INADEQUATE CLEANING OF ESSENTIAL SERVICE WATER DIESEL FUEL OIL STORAGE TANKS.

A self-revealing NCV of Technical Specification 5.4.1a, "Procedures", was identified for Byron's inadequate cleaning procedure for the Essential Service Water (SX) make-up pump diesel fuel oil storage tanks. This resulted in each of the SX make-up pumps being inoperable for a period of approximately 60 days. Byron's inadequate SX fuel tank cleaning procedure is identified as a performance deficiency that is greater than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone to ensure the availability, reliability, and capability of systems to respond to an initiating event to prevent undesirable consequences. A contributing cause to the inadequate SX fuel tank cleaning is related to the Human Performance cross-cutting area. Procedures for diesel fuel oil tank cleaning and post maintenance testing lacked technical details to ensure that the SX make-up pumps were restored to an operable condition.

Inspection Report# : [2005009\(pdf\)](#)

Barrier Integrity



Significance: Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

DEGRADED INCORRECT PLANT BARRIER IMPAIRMENT EVALUATION RESULTED IN AN AUXILIARY BUILDING INTEGRITY

A finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification 5.4.1, regarding procedure adherence was inspector identified when the inspectors identified that ventilation barrier requirements were not being met during a routine assessment of work activities in the Unit 2 containment spray pump rooms. Upon identification, the licensee restored the barrier. The primary cause of this violation was related to the cross-cutting area of Human Performance.

This finding was more than minor because it affected the barrier integrity objective to provide reasonable assurance that the physical design barriers to protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance because the issue only represented a degradation of the radiological barrier function provided for the auxiliary building.

Inspection Report# : [2006002\(pdf\)](#)



Significance: Sep 30, 2005

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FUEL HANDLING ERROR POTENTIALLY DAMAGES FUEL ASSEMBLY.

A Non-Cited Violation (NCV) of TS 5.4.1a, having very low safety significance was self-revealed. Specifically, a fuel handler moving new fuel in the spent fuel pool failed to unlatch the fuel assembly after being lowered into the designated storage position, potentially damaging the fuel assembly as the bridge crane was trolleyed with the fuel assembly partially inserted in its storage location. The inspectors determined that the failure

to detach the fuel assembly from the fuel handling tool prior to raising the assembly approximately three feet and moving the spent fuel pool bridge crane hoist trolley was a performance deficiency. This performance deficiency warranted a significance evaluation in accordance with Inspection Manual Chapter (IMC) 0612 "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." The inspectors determined that the finding was more than minor because it is related to the human performance attribute of the barrier integrity cornerstone to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. A contributing cause to the fuel handling procedure violation is related to the Human Performance cross-cutting area. The operators failed to follow the procedure specified in OUBY-204, "Fuel Handling Procedures in the Spent Fuel Pool for Byron", Revision 2.

Inspection Report# : [2005009\(pdf\)](#)

Emergency Preparedness

Significance: SL-IV Dec 31, 2005

Identified By: NRC

Item Type: VIO Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR CHANGE TO AN EAL THAT DECREASED THE EFFECTIVENESS OF THE EMERGENCY PLAN

The inspectors identified that the licensee had changed its standard emergency action level (EAL) scheme by revising one EAL's criteria for an Unusual Event declaration that addressed an unplanned radiological release in excess of effluent radiation monitor readings unless the release could be determined to be below Offsite Dose Calculation Manual limits within 15 minutes for releases that could not be terminated in 60 minutes or less. The inspectors determined that this EAL change decreased the effectiveness of the emergency plan, and that the licensee did not obtain prior NRC approval for this change, contrary to the requirements of 10 CFR 50.54(q). The licensee is evaluating the options to correct the EAL.

Because the issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process as specified in Section IV.A.3 of the Enforcement Policy. According to Supplement VIII of the Enforcement Policy, this finding was determined to be a Severity Level IV because it involved a failure to meet a requirement not directly related to assessment and notification. Further, this problem was isolated to one EAL and was not indicative of a functional problem with the EAL scheme. Additionally, because the violation was a Severity Level IV and the licensee entered this issue into its corrective action program this finding is being treated as a Severity Level IV Non-Cited Violation of 10 CFR 50.54(q).

Inspection Report# : [2005011\(pdf\)](#)

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Significance: N/A Jul 01, 2005

Identified By: NRC

Item Type: FIN Finding

PI&R INSPECTION SUMMARY

Overall, the team concluded that problems were being adequately identified, evaluated, and corrected. Issues captured in the corrective action program were appropriately screened and evaluated for root or apparent causes and workers generally expressed positive views about the program. However, the team identified two concerns that cut across all the functional areas (problem identification, evaluation and resolution) of the corrective actions program. Specifically, the team identified that plant staff were sometimes too focused on the specific process being implemented than on the overall program. There were several instances where issues were identified during cause or operability evaluations, but were not fed back into the corrective action program, because it was not a specific requirement of the evaluation process. The team also noted that industry experience, especially Braidwood station experience, was underutilized in identifying or evaluating issues. The Nuclear Oversight organization was

considered intrusive and challenged corrective action program performance based on the numerous examples of assessment findings reviewed during the inspection. The team also observed that the station had reasonably addressed previously identified NRC issues, but noted that Nuclear Oversight had identified some concerns with the corrective actions for those issues identified during the 2003 NRC Problem Identification and Resolution inspection.

Inspection Report# : [2005008\(pdf\)](#)

Last modified : August 25, 2006

Byron 2

3Q/2006 Plant Inspection Findings

Initiating Events

Significance:  Dec 31, 2005

Identified By: Self-Revealing

Item Type: FIN Finding

FAILURE OF THE NEWLY INSTALLED DIGITAL ELECTROHYDRAULIC SYSTEM TO RESPOND TO OPERATOR'S INPUT TO INITIATE A TURBINE RUNBACK

A finding having very low safety significance (Green) was self-revealed when the newly installed Digital Electrohydraulic System (DEH) failed to respond to operator input to initiate a turbine runback that subsequently resulted in a reactor trip. The inspectors determined that the algorithm required for turbine runback was deleted from the software database due to a compiler fault. Modification review and testing performed by the licensee failed to discover the software error. To correct the problem the licensee reinstalled the deleted software algorithm into the DEH system.

The finding was more than minor because it affected the design control attribute of the Initiating Events cornerstone objective. The attribute objective limits the likelihood of those events that upset plant stability and challenge critical safety functions during at-power operations. Specifically, the lack of turbine runback capability contributed to a reactor trip from a feedwater system transient. The finding was determined to be of very low safety significance (Green), since it only contributed to the likelihood of a reactor trip. No violation of NRC requirements occurred.

Inspection Report# : [2005011\(pdf\)](#)

Mitigating Systems

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO MAINTAIN FIRE BARRIERS IN ACCORDANCE WITH FIRE PROTECTION PROGRAM.

The inspectors identified a Non-Cited Violation of Byron Facility Operating License Nos. NPF-37 and NPF-66, Condition 2.c.6, for failing to maintain the firewall separating the Auxiliary Building from the penetration area in accordance with the approved fire protection program. Fire seals were required to be provided in this firewall, except where an evaluation had been performed and approved to allow a deviation. Two sleeves containing fire seals had pulling ropes embedded in the fire seals in the firewall separating the Auxiliary Building General Area 401 from the Unit 1 piping penetration area; also, no evaluation or exemption existed to justify this configuration. The licensee entered the issue into its corrective action program for resolution and implemented compensatory measures that included hourly fire watches.

This finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure that external factors (i.e., fire, flood, etc) do not impact the availability, reliability, and capability of systems that respond to initiating events. The finding was of very low safety significance because the fire seals were in small diameter sleeves that traveled a distance of 45 feet and had two 90 degree bends and the location of combustibles were positioned such that the piping penetration end of the fire seals would not be subject to direct flame impingement.

Inspection Report# : [2006004\(pdf\)](#)

Significance:  Mar 24, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Translate Design Basis Into Procedures for Service Water Flow to the CC Heat Exchangers

The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance for the licensee's failure to correctly translate the design basis into procedures. Specifically, the licensee failed to update operator rounds to verify the revised design basis minimum value for essential service water flow to the component cooling water (CC) heat exchangers. In addition, because the operator rounds were not revised, the design basis minimum flow value was not bounded by the emergency operating procedure used for establishing initial cold leg recirculation in the event of a loss of coolant accident (LOCA). This issue was entered into the licensee's corrective action program to revise the operator rounds.

The issue was more than minor because it was associated with the Mitigating System cornerstone attribute of "Design Control," and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to have operator rounds verify the design basis minimum service water flow or to have the emergency operating procedures ensure the minimum flow prior to establishing initial cold leg recirculation in the event of a LOCA could potentially have allowed the service water flow to be less than the required value to maintain the design heat load during post LOCA conditions. This finding was of very low safety significance because it screened out as Green using the SDP Phase 1 worksheet. Even though the licensee did not control their bounding design basis service water flow procedurally, the flow to the CC heat exchangers has historically been well above the bounding design basis flow.

Inspection Report# : [2006006\(pdf\)](#)



Significance: Mar 24, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Reduction of Fire Suppression Capacity and Capability

The inspectors identified a Non-Cited Violation of 10 CFR 50.48(a)(1) having very low safety significance for the licensee's failure to provide fire fighting systems of appropriate capacity and capability to minimize the adverse effects of fires on structures, systems, and components important to safety. Specifically, the licensee abandoned standpipes and manual hose stations located near safety-related equipment (essential service water makeup pumps) which reduced the fire suppression capacity and capability to protect such equipment. In addition, the site relied on a local fire department instead of the site fire brigade to manually suppress a fire that could have affected safety-related equipment. This issue was entered into the licensee's corrective action program, and compensatory measures were taken to place dry chemical fire extinguishers in the vicinity of the fire area to take the place of the abandoned manual fire hose stations.

This finding was considered more than minor because it was associated with the Mitigating System cornerstone attribute of "Protection Against External Factors," and affected the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, removing the manual hose stations reduced the fire suppression capacity and capability for protecting the emergency service water cooling tower makeup pumps and their diesels in the event of a fire. This finding was determined to be of very low safety significance (Green) based on a Phase 3 SDP evaluation.

Inspection Report# : [2006006\(pdf\)](#)



Significance: Dec 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

FAILED TO PERFORM VT-2 EXAMINATION AT NOMINAL OPERATING PRESSURE FOR SIX NEW RHR SYSTEM WELDS

The inspectors identified a finding involving a Non-Cited Violation (NCV) of 10 CFR Part 50.55a(g)(4)ii having very low safety significance for failure to perform a VT-2 examination at nominal operating pressure for six new residual heat removal system welds that were returned to service. This finding was entered into the licensee's corrective action program.

This finding was more than minor significance because the licensee returned these six welds to service without completing the required pressure test and VT-2 examination, which placed this system at increased risk for undetected leakage and component failure. Operation of this system with improperly tested piping affected the mitigating systems cornerstone objective of equipment reliability. This finding was of very low safety significance because the required test and VT-2 examination were subsequently completed and all welds passed. The finding was not suitable for a significance

determination process evaluation. This finding has been reviewed by NRC Management and has been determined to be a Green finding of very low safety significance.

Inspection Report# : [2005011\(pdf\)](#)

Barrier Integrity

Significance:  Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

DEGRADED INCORRECT PLANT BARRIER IMPAIRMENT EVALUATION RESULTED IN AN AUXILIARY BUILDING INTEGRITY

A finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification 5.4.1, regarding procedure adherence was inspector identified when the inspectors identified that ventilation barrier requirements were not being met during a routine assessment of work activities in the Unit 2 containment spray pump rooms. Upon identification, the licensee restored the barrier. The primary cause of this violation was related to the cross-cutting area of Human Performance.

This finding was more than minor because it affected the barrier integrity objective to provide reasonable assurance that the physical design barriers to protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance because the issue only represented a degradation of the radiological barrier function provided for the auxiliary building.

Inspection Report# : [2006002\(pdf\)](#)

Emergency Preparedness

Significance: SL-IV Dec 31, 2005

Identified By: NRC

Item Type: VIO Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR CHANGE TO AN EAL THAT DECREASED THE EFFECTIVENESS OF THE EMERGENCY PLAN

The inspectors identified that the licensee had changed its standard emergency action level (EAL) scheme by revising one EAL's criteria for an Unusual Event declaration that addressed an unplanned radiological release in excess of effluent radiation monitor readings unless the release could be determined to be below Offsite Dose Calculation Manual limits within 15 minutes for releases that could not be terminated in 60 minutes or less. The inspectors determined that this EAL change decreased the effectiveness of the emergency plan, and that the licensee did not obtain prior NRC approval for this change, contrary to the requirements of 10 CFR 50.54(q). The licensee is evaluating the options to correct the EAL.

Because the issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process as specified in Section IV.A.3 of the Enforcement Policy. According to Supplement VIII of the Enforcement Policy, this finding was determined to be a Severity Level IV because it involved a failure to meet a requirement not directly related to assessment and notification. Further, this problem was isolated to one EAL and was not indicative of a functional problem with the EAL scheme. Additionally, because the violation was a Severity Level IV and the licensee entered this issue into its corrective action program this finding is being treated as a Severity Level IV Non-Cited Violation of 10 CFR 50.54(q).

Inspection Report# : [2005011\(pdf\)](#)

Occupational Radiation Safety

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST AND CONTROL A HIGH RADIATION AREA.

An inspector-identified finding of very low safety significance and two associated Non-Cited Violations of NRC requirements were identified for the failure to post and control access to High Radiation Areas, as required by 10 CFR Part 20, to notify individuals of the radiological hazard present and to prevent the unauthorized entry to such areas. Specifically, the entrance to the Unit 1 Filter Valve Aisle located on the 383' elevation of the Auxiliary Building, a high radiation area with a radiation dose rate of approximately 135 millirem in one hour, was not posted or controlled by any of the methods described in 10 CFR 20.1902, 10 CFR 20.1601, or Technical Specification 5.7.1.

The issue was more than minor because the issue was associated with the Program/Process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The issue represents a finding of very low safety significance because the finding did not constitute an ALARA or work control issue, did not result in an overexposure or the substantial potential for an overexposure, and did not compromise the licensee's ability to assess dose. Non-Cited Violations of 10 CFR 20.1902 and 10 CFR 20.1601 were identified for the failure to post and control access to high radiation areas. Corrective actions taken by the licensee for this finding included establishing control through postings and barricades. The cause of this finding is related to the cross-cutting element of human performance.

Inspection Report# : [2006004\(pdf\)](#)

Public Radiation Safety

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE THE POTENTIAL RADIOLOGICAL HAZARD ASSOCIATED WITH THE LEAKAGE OF WATER FROM THE VACUUM BREAKER VALVE VAULT.

An inspector-identified finding of very low safety significance and an associated Non-Cited Violation of NRC requirements were identified for the failure to perform surveys that are necessary to comply with the regulations in 10 CFR Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present prior to pumping liquids from blowdown line vacuum breaker valve vaults to the environment. Specifically, the conditions found at 0CW276 (vault No. 6) on July 7, 2005, were outside the parameters of the original assessment, and the licensee did not evaluate the change of conditions for the potential radiological hazards to ensure compliance with 10 CFR 20.1301, which limits radiation exposure to a member of the public to 0.1 rem.

The issue was more than minor because the issue was associated with the Program/Process attribute of the Public Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. Since the releases were limited to licensee owned property, the licensee has not measured any licensed material beyond its property line, and the licensee's REMP has a monitoring well in the vicinity of the blowdown lines, the finding did not represent a failure to assess dose nor a failure to assess the environmental impact. Consequently, the finding was determined to be of very low safety significance. A Non-Cited Violation of 10 CFR 20.1501 was identified for the failure to make surveys to ensure compliance with 10 CFR 20.1301, which limits radiation exposure to a member of the public to 0.1 rem. Corrective actions taken by the licensee for this finding included performing surveys of the soil surrounding the vacuum breaker vault for radionuclides, establishing additional groundwater monitoring wells, sealing the vacuum breaker vaults, and installing of an automated leak detection system. The cause of this finding is related to the cross-cutting element of problem identification and resolution.

Inspection Report# : [2006004\(pdf\)](#)

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Last modified : December 21, 2006

Byron 2

4Q/2006 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Dec 01, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Errors in Unverified Design Input Data Used to Determine the Impact of Core Power Uprate on Medium Voltage Loads

Green. The team identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance. The power uprate electrical loading calculation used incorrect design input for the 4160 Vac engineered safety features (ESF) distribution system load analysis. Specifically, the licensee's contract engineering organization failed to adequately verify design input data used to determine brake horsepower loading. The incorrect horsepower values were subsequently used in revising the 4160 Vac ESF distribution system power analysis. The licensee's acceptance review did not identify the problem. Using corrected values, the licensee determined that the reduction in load margin was acceptable based on a revised loading calculation prepared informally during the inspection.

The finding was more than minor because failing to correctly identify, verify, and input the correct design data into the electrical power analysis program resulted in the load conditions not being adequately evaluated, resulting in inaccurate and non-conservative determination of loading and load margin for the 4160 Vac ESF buses. The finding was of very low safety significance based on the results of the licensee's analysis and screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2006009](#) (*pdf*)

Significance:  Dec 01, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Acceptance Criteria for Safety Injection Pump NPSH Not Met

Green. The team identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance. Specifically, the calculation for evaluating the net positive suction head (NPSH) for the safety injection pump contained errors and failed to demonstrate that the acceptance criteria was met. To demonstrate operability, the licensee performed a preliminary calculation, using a less conservative pump flow value along with correcting the identified errors.

The finding was more than minor because the calculation of record was not adequate and failed to demonstrate that the NPSH available met design basis requirements. The finding was of very low safety significance based on the results of the licensee's corrected analysis and screened as Green using the SDP Phase 1 screening worksheet. The cause of the finding was related to the cross-cutting aspect of human performance.

Inspection Report# : [2006009](#) (*pdf*)

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO MAINTAIN FIRE BARRIERS IN ACCORDANCE WITH FIRE PROTECTION PROGRAM.

The inspectors identified a Non-Cited Violation of Byron Facility Operating License Nos. NPF-37 and NPF-66, Condition 2.c.6, for failing to maintain the firewall separating the Auxiliary Building from the penetration area in accordance with the

approved fire protection program. Fire seals were required to be provided in this firewall, except where an evaluation had been performed and approved to allow a deviation. Two sleeves containing fire seals had pulling ropes embedded in the fire seals in the firewall separating the Auxiliary Building General Area 401 from the Unit 1 piping penetration area; also, no evaluation or exemption existed to justify this configuration. The licensee entered the issue into its corrective action program for resolution and implemented compensatory measures that included hourly fire watches.

This finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure that external factors (i.e., fire, flood, etc) do not impact the availability, reliability, and capability of systems that respond to initiating events. The finding was of very low safety significance because the fire seals were in small diameter sleeves that traveled a distance of 45 feet and had two 90 degree bends and the location of combustibles were positioned such that the piping penetration end of the fire seals would not be subject to direct flame impingement.

Inspection Report# : [2006004 \(pdf\)](#)

Significance:  Mar 24, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Translate Design Basis Into Procedures for Service Water Flow to the CC Heat Exchangers

The inspectors identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance for the licensee's failure to correctly translate the design basis into procedures. Specifically, the licensee failed to update operator rounds to verify the revised design basis minimum value for essential service water flow to the component cooling water (CC) heat exchangers. In addition, because the operator rounds were not revised, the design basis minimum flow value was not bounded by the emergency operating procedure used for establishing initial cold leg recirculation in the event of a loss of coolant accident (LOCA). This issue was entered into the licensee's corrective action program to revise the operator rounds.

The issue was more than minor because it was associated with the Mitigating System cornerstone attribute of "Design Control," and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to have operator rounds verify the design basis minimum service water flow or to have the emergency operating procedures ensure the minimum flow prior to establishing initial cold leg recirculation in the event of a LOCA could potentially have allowed the service water flow to be less than the required value to maintain the design heat load during post LOCA conditions. This finding was of very low safety significance because it screened out as Green using the SDP Phase 1 worksheet. Even though the licensee did not control their bounding design basis service water flow procedurally, the flow to the CC heat exchangers has historically been well above the bounding design basis flow.

Inspection Report# : [2006006 \(pdf\)](#)

Significance:  Mar 24, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Reduction of Fire Suppression Capacity and Capability

The inspectors identified a Non-Cited Violation of 10 CFR 50.48(a)(1) having very low safety significance for the licensee's failure to provide fire fighting systems of appropriate capacity and capability to minimize the adverse effects of fires on structures, systems, and components important to safety. Specifically, the licensee abandoned standpipes and manual hose stations located near safety-related equipment (essential service water makeup pumps) which reduced the fire suppression capacity and capability to protect such equipment. In addition, the site relied on a local fire department instead of the site fire brigade to manually suppress a fire that could have affected safety-related equipment. This issue was entered into the licensee's corrective action program, and compensatory measures were taken to place dry chemical fire extinguishers in the vicinity of the fire area to take the place of the abandoned manual fire hose stations.

This finding was considered more than minor because it was associated with the Mitigating System cornerstone attribute of "Protection Against External Factors," and affected the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, removing the manual hose stations reduced the fire suppression capacity and capability for protecting the emergency service water cooling tower makeup pumps and their diesels in the event of a fire. This finding was determined to be of very low safety significance (Green) based on a

Phase 3 SDP evaluation.
Inspection Report# : [2006006 \(pdf\)](#)

Barrier Integrity

Significance:  Mar 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

DEGRADED INCORRECT PLANT BARRIER IMPAIRMENT EVALUATION RESULTED IN AN AUXILIARY BUILDING INTEGRITY

A finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification 5.4.1, regarding procedure adherence was inspector identified when the inspectors identified that ventilation barrier requirements were not being met during a routine assessment of work activities in the Unit 2 containment spray pump rooms. Upon identification, the licensee restored the barrier. The primary cause of this violation was related to the cross-cutting area of Human Performance.

This finding was more than minor because it affected the barrier integrity objective to provide reasonable assurance that the physical design barriers to protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance because the issue only represented a degradation of the radiological barrier function provided for the auxiliary building.

Inspection Report# : [2006002 \(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST AND CONTROL A HIGH RADIATION AREA.

An inspector-identified finding of very low safety significance and two associated Non-Cited Violations of NRC requirements were identified for the failure to post and control access to High Radiation Areas, as required by 10 CFR Part 20, to notify individuals of the radiological hazard present and to prevent the unauthorized entry to such areas. Specifically, the entrance to the Unit 1 Filter Valve Aisle located on the 383' elevation of the Auxiliary Building, a high radiation area with a radiation dose rate of approximately 135 millirem in one hour, was not posted or controlled by any of the methods described in 10 CFR 20.1902, 10 CFR 20.1601, or Technical Specification 5.7.1.

The issue was more than minor because the issue was associated with the Program/Process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The issue represents a finding of very low safety significance because the finding did not constitute an ALARA or work control issue, did not result in an overexposure or the substantial potential for an overexposure, and did not compromise the licensee's ability to assess dose. Non-Cited Violations of 10 CFR 20.1902 and 10 CFR 20.1601 were identified for the failure to post and control access to high radiation areas. Corrective actions taken by the licensee for this finding included establishing control through postings and barricades. The cause of this finding is related to the cross-cutting element of human performance.

Inspection Report# : [2006004 \(pdf\)](#)

Public Radiation Safety

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE THE POTENTIAL RADIOLOGICAL HAZARD ASSOCIATED WITH THE LEAKAGE OF WATER FROM THE VACUUM BREAKER VALVE VAULT.

An inspector-identified finding of very low safety significance and an associated Non-Cited Violation of NRC requirements were identified for the failure to perform surveys that are necessary to comply with the regulations in 10 CFR Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present prior to pumping liquids from blowdown line vacuum breaker valve vaults to the environment. Specifically, the conditions found at 0CW276 (vault No. 6) on July 7, 2005, were outside the parameters of the original assessment, and the licensee did not evaluate the change of conditions for the potential radiological hazards to ensure compliance with 10 CFR 20.1301, which limits radiation exposure to a member of the public to 0.1 rem.

The issue was more than minor because the issue was associated with the Program/Process attribute of the Public Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. Since the releases were limited to licensee owned property, the licensee has not measured any licensed material beyond its property line, and the licensee's REMF has a monitoring well in the vicinity of the blowdown lines, the finding did not represent a failure to assess dose nor a failure to assess the environmental impact. Consequently, the finding was determined to be of very low safety significance. A Non-Cited Violation of 10 CFR 20.1501 was identified for the failure to make surveys to ensure compliance with 10 CFR 20.1301, which limits radiation exposure to a member of the public to 0.1 rem. Corrective actions taken by the licensee for this finding included performing surveys of the soil surrounding the vacuum breaker vault for radionuclides, establishing additional groundwater monitoring wells, sealing the vacuum breaker vaults, and installing of an automated leak detection system. The cause of this finding is related to the cross-cutting element of problem identification and resolution.

Inspection Report# : [2006004](#) (*pdf*)

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Last modified : March 01, 2007

Byron 2

1Q/2007 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Mar 31, 2007

Identified By: NRC

Item Type: FIN Finding

INADEQUATE SETPOINT CONTROL OF THE OIL LEVEL TO SAFETY RELATED PUMPS.

The inspectors identified a finding for the licensee's failure to maintain setpoint control of the constant level oilers. Specifically, the licensee did not incorporate the vendor's recommendation on setting the oil level for the essential service water pumps. This condition increased the challenges to the proper functioning of the lubricating oil and thus to the bearings of the safety-related pumps. The licensee subsequently reset the oil level for the pumps to the recommended setting and entered this issue into their corrective action program.

this finding is more than minor because of the potential for degradation of oil and bearings to safety related components, which could adversely affect their availability and reliability. This finding is of very low safety significance because no bearings had been damaged due to the high oil levels despite operating in this condition for many years and no significant oil degradation had occurred. The inspectors did not identify a violation of regulatory requirements. However, the cause of the finding is related to the cross-cutting element of problem identification and resolution, particularly the thoroughness of the extent of condition review. (Section 1R04.2)

Inspection Report# : [2007002 \(pdf\)](#)

Significance:  Mar 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

ADEQUACY OF SAFE SHUTDOWN PROCEDURES TO ADDRESS DRAINING OF THE RWST.

The inspectors identified a Non-Cited Violation (NCV) of the Byron Station Operating License for the failure to have adequate alternate safe shutdown procedure. Specifically, licensee's procedure BOP FR-1, "Fire Response Guidelines," did not include adequate steps and instructions to prevent the draining of the refueling water storage tank (RWST) into the containment sump in the event of a fire in the auxiliary electrical equipment room (AEER) or the control room. The licensee implemented appropriate procedure changes for both the AEER and control room fire zones to isolate all potential RWST drain paths.

The finding is greater than minor because it affected the attribute of procedure quality for protection against external factors and it impacted the objective of the mitigating systems cornerstone. The failure to provide adequate instructions in the alternate shutdown procedure to promptly prevent the draining of the RWST to the containment sump could have adversely impacted the operators' ability to promptly take appropriate actions and could have complicated safe shutdown in the event of a fire. The finding was of very low safety significance based on Phase 2 and Phase 3 SDP evaluations completed by the Region III senior reactor analyst (SRA) in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process." (Section 1R05.2)

Inspection Report# : [2007002 \(pdf\)](#)

Significance:  Jan 16, 2007

Identified By: NRC

Item Type: FIN Finding

FAILURE TO HAVE SETPOINT CONTROL OF THE CONSTANT LEVEL OILERS ON SAFETY-RELATED PUMPS

The inspectors identified a finding of very low safety significance associated with the failure to maintain control of the setpoints for constant level oilers. This condition increased the challenges to the proper functioning of the lubricating oil and thus to the bearings to the safety-related pumps.

This finding was considered more than minor because of the potential for the degradation of oil/bearings to safety-related components which would increase their unavailability and unreliability. This finding was of very low safety significance because no bearings had been damaged due to the high or low oil levels despite operating in this condition for many years and the oil had only been moderately impacted. The licensee's corrective actions included assessing the setpoints of other safety related and non-safety related pumps, verifying no pumps had been damaged, and revising the work order template to include the reference to the corporate procedure for the setting of constant level oilers. No violation of NRC requirements occurred.

Inspection Report# : [2006005](#) (*pdf*)

G

Significance: Dec 01, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Errors in Unverified Design Input Data Used to Determine the Impact of Core Power Uprate on Medium Voltage Loads

Green. The team identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance. The power uprate electrical loading calculation used incorrect design input for the 4160 Vac engineered safety features (ESF) distribution system load analysis. Specifically, the licensee's contract engineering organization failed to adequately verify design input data used to determine brake horsepower loading. The incorrect horsepower values were subsequently used in revising the 4160 Vac ESF distribution system power analysis. The licensee's acceptance review did not identify the problem. Using corrected values, the licensee determined that the reduction in load margin was acceptable based on a revised loading calculation prepared informally during the inspection.

The finding was more than minor because failing to correctly identify, verify, and input the correct design data into the electrical power analysis program resulted in the load conditions not being adequately evaluated, resulting in inaccurate and non-conservative determination of loading and load margin for the 4160 Vac ESF buses. The finding was of very low safety significance based on the results of the licensee's analysis and screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2006009](#) (*pdf*)

G

Significance: Dec 01, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Acceptance Criteria for Safety Injection Pump NPSH Not Met

Green. The team identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance. Specifically, the calculation for evaluating the net positive suction head (NPSH) for the safety injection pump contained errors and failed to demonstrate that the acceptance criteria was met. To demonstrate operability, the licensee performed a preliminary calculation, using a less conservative pump flow value along with correcting the identified errors.

The finding was more than minor because the calculation of record was not adequate and failed to demonstrate that the NPSH available met design basis requirements. The finding was of very low safety significance based on the results of the licensee's corrected analysis and screened as Green using the SDP Phase 1 screening worksheet. The cause of the finding was related to the cross-cutting aspect of human performance.

Inspection Report# : [2006009](#) (*pdf*)

G

Significance: Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO MAINTAIN FIRE BARRIERS IN ACCORDANCE WITH FIRE PROTECTION PROGRAM.

The inspectors identified a Non-Cited Violation of Byron Facility Operating License Nos. NPF-37 and NPF-66, Condition 2.c.6, for failing to maintain the firewall separating the Auxiliary Building from the penetration area in accordance with the approved fire protection program. Fire seals were required to be provided in this firewall, except where an evaluation had been performed and approved to allow a deviation. Two sleeves containing fire seals had pulling ropes embedded in the fire seals in the firewall separating the Auxiliary Building General Area 401 from the Unit 1 piping penetration area; also, no evaluation or exemption existed to justify this configuration. The licensee entered the issue into its corrective action program for resolution and implemented compensatory measures that included hourly fire watches.

This finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure that external factors (i.e., fire, flood, etc) do not impact the availability, reliability, and capability of systems that respond to initiating events. The finding was of very low safety significance because the fire seals were in small diameter sleeves that traveled a distance of 45 feet and had two 90 degree bends and the location of combustibles were positioned such that the piping penetration end of the fire seals would not be subject to direct flame impingement.

Inspection Report# : [2006004](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST AND CONTROL A HIGH RADIATION AREA.

An inspector-identified finding of very low safety significance and two associated Non-Cited Violations of NRC requirements were identified for the failure to post and control access to High Radiation Areas, as required by 10 CFR Part 20, to notify individuals of the radiological hazard present and to prevent the unauthorized entry to such areas. Specifically, the entrance to the Unit 1 Filter Valve Aisle located on the 383' elevation of the Auxiliary Building, a high radiation area with a radiation dose rate of approximately 135 millirem in one hour, was not posted or controlled by any of the methods described in 10 CFR 20.1902, 10 CFR 20.1601, or Technical Specification 5.7.1.

The issue was more than minor because the issue was associated with the Program/Process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The issue represents a finding of very low safety significance because the finding did not constitute an ALARA or work control issue, did not result in an overexposure or the substantial potential for an overexposure, and did not compromise the licensee's ability to assess dose. Non-Cited Violations of 10 CFR 20.1902 and 10 CFR 20.1601 were identified for the failure to post and control access to high radiation areas. Corrective actions taken by the licensee for this finding included establishing control through postings and barricades. The cause of this finding is related to the cross-cutting element of human performance.

Inspection Report# : [2006004](#) (*pdf*)

Public Radiation Safety

G**Significance:** Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE THE POTENTIAL RADIOLOGICAL HAZARD ASSOCIATED WITH THE LEAKAGE OF WATER FROM THE VACUUM BREAKER VALVE VAULT.

An inspector-identified finding of very low safety significance and an associated Non-Cited Violation of NRC requirements were identified for the failure to perform surveys that are necessary to comply with the regulations in 10 CFR Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present prior to pumping liquids from blowdown line vacuum breaker valve vaults to the environment. Specifically, the conditions found at 0CW276 (vault No. 6) on July 7, 2005, were outside the parameters of the original assessment, and the licensee did not evaluate the change of conditions for the potential radiological hazards to ensure compliance with 10 CFR 20.1301, which limits radiation exposure to a member of the public to 0.1 rem.

The issue was more than minor because the issue was associated with the Program/Process attribute of the Public Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. Since the releases were limited to licensee owned property, the licensee has not measured any licensed material beyond its property line, and the licensee's REMP has a monitoring well in the vicinity of the blowdown lines, the finding did not represent a failure to assess dose nor a failure to assess the environmental impact. Consequently, the finding was determined to be of very low safety significance. A Non-Cited Violation of 10 CFR 20.1501 was identified for the failure to make surveys to ensure compliance with 10 CFR 20.1301, which limits radiation exposure to a member of the public to 0.1 rem. Corrective actions taken by the licensee for this finding included performing surveys of the soil surrounding the vacuum breaker vault for radionuclides, establishing additional groundwater monitoring wells, sealing the vacuum breaker vaults, and installing of an automated leak detection system. The cause of this finding is related to the cross-cutting element of problem identification and resolution.

Inspection Report# : [2006004](#) (*pdf*)

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Last modified : June 01, 2007

Byron 2

2Q/2007 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FIRE PROOF STRUCTURAL STEEL BEAMS TO ACHIEVE A 3-HOUR FIRE RATING.

The inspectors identified an NCV of Byron Station's Operating License Condition 2.C.6 for failure to maintain a 3-hour rated firewall in the control room heating, ventilation and air conditioning (HVAC) equipment room.

Specifically, the walls between the upper cable spreading rooms and the control room HVAC equipment were not fireproofed to achieve a 3-hour rating as required by the fire protection report and applicable plant drawings. The licensee entered this issue into its corrective action program for resolution and implemented compensatory measures that included hourly fire watches.

This finding was more than minor because it was associated with the external factor attribute of the Initiating Events cornerstone related to fire and it affected the cornerstone's objective to limit the likelihood of fire that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was of very low safety significance because there were no fire ignition source scenarios that would have caused the structural steel beams to weaken and the ceiling to collapse.

Inspection Report# : [2007003](#) (*pdf*)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM A MT EXAMINATION IN ACCORDANCE WITH ASME SECTION XI.

The inspectors identified an NCV of 10 CFR 50.55(a)(g)(4) for failure to perform a Magnetic Particle (MT) examination of the full required exam surface on a steam generator (SG) main feedwater nozzle weld (2RC01BA) in accordance with the American Society of Mechanical Engineers (ASME) Section XI Code. The examiners subsequently completed the MT examination of the required area and the issue was entered into the licensee's corrective action program.

This finding was greater than minor significance because it was associated with the Initiating Events cornerstone attribute of "Equipment Performance," and affected the cornerstone objective to limit those events (reactor coolant system barrier failure) which upset plant safety and challenge safety systems. Absent NRC intervention, the licensee would not have performed the full Code-required exam of the weld for an indefinite period of service which would have placed the reactor coolant pressure boundary at increased risk for undetected cracking, leakage, or component failure. This finding was of very low safety significance because a qualified examination was subsequently performed with no relevant indications detected. In particular, it did not result in the loss of function of the mitigating system.

Inspection Report# : [2007003](#) (*pdf*)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

DESIGN BASIS ANALYSIS FOR THE POSTULATED DROP OF A REACTOR VESSEL HEAD DURING REFUELING WAS NOT UP-TO-DATE.

The inspectors identified a finding of very low safety significance and associated NCV for a failure to establish measures to assure that regulatory requirements and the design basis were correctly translated into procedures as required by 10 CFR 50 Appendix B Criterion III. Specifically, the procedures related to the reactor vessel head lift did not correctly reflect in a non conservative direction the design lift height. As immediate corrective actions, the

licensee incorporated compensatory measures to lower reactor cavity water level during the head lift to ensure the actual airdrop distance was bounded by the analysis.

It was more than minor because it involved the equipment performance attribute of the Initiating Events Cornerstone Objective. The finding was determined to be of very low safety significance (Green) because as part of the additional corrective actions, the licensee's subsequent calculations showed the lift height was acceptable due to margin gained from the much heavier head weight assumed in their analysis.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, operating experience because the licensee failed to implement and institutionalize operating experience through changes to their procedures (P.2(b)).

Inspection Report# : [2007003](#) (*pdf*)

Mitigating Systems

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

ALTERNATIVE SHUTDOWN USING THE REMOTE SHUTDOWN PANEL.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to ensure that all testing necessary to demonstrate that the Unit 1 and 2 remote shutdown panels (RSPs) will perform satisfactorily in-service be identified and conducted. Specifically, the licensee failed to periodically test applicable (i.e., important to safety) components (e.g., control switches) on the RSPs to ensure the operability and functional performance of the RSP components and the operability of their associated systems as a whole. The licensee's corrective actions were to immediately begin testing of the instrumentation and controls located at the RSP and to continue the testing in accordance with a schedule that would allow timely completion.

The finding was more than minor because the finding was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was of very low safety significance because the finding did not represent an actual loss of the instrumentation indications and control functions at the RSP, since the 1B0A PRI-5 and 2B0A PRI-5 procedures' "Response Not Obtained" column provided an alternative shutdown capability method using local manual actions and the Fire Hazards Panel.

Inspection Report# : [2007003](#) (*pdf*)

Significance:  Mar 31, 2007

Identified By: NRC

Item Type: FIN Finding

INADEQUATE SETPOINT CONTROL OF THE OIL LEVEL TO SAFETY RELATED PUMPS.

The inspectors identified a finding for the licensee's failure to maintain setpoint control of the constant level oilers. Specifically, the licensee did not incorporate the vendor's recommendation on setting the oil level for the essential service water pumps. This condition increased the challenges to the proper functioning of the lubricating oil and thus to the bearings of the safety-related pumps. The licensee subsequently reset the oil level for the pumps to the recommended setting and entered this issue into their corrective action program.

this finding is more than minor because of the potential for degradation of oil and bearings to safety related components, which could adversely affect their availability and reliability. This finding is of very low safety significance because no bearings had been damaged due to the high oil levels despite operating in this condition for many years and no significant oil degradation had occurred. The inspectors did not identify a violation of regulatory requirements. However, the cause of the finding is related to the cross-cutting element of problem identification and

resolution, particularly the thoroughness of the extent of condition review. (Section 1R04.2)

Inspection Report# : [2007002](#) (*pdf*)

Significance:  Mar 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

ADEQUACY OF SAFE SHUTDOWN PROCEDURES TO ADDRESS DRAINING OF THE RWST.

The inspectors identified a Non-Cited Violation (NCV) of the Byron Station Operating License for the failure to have adequate alternate safe shutdown procedure. Specifically, licensee's procedure BOP FR-1, "Fire Response Guidelines," did not include adequate steps and instructions to prevent the draining of the refueling water storage tank (RWST) into the containment sump in the event of a fire in the auxiliary electrical equipment room (AEER) or the control room. The licensee implemented appropriate procedure changes for both the AEER and control room fire zones to isolate all potential RWST drain paths.

The finding is greater than minor because it affected the attribute of procedure quality for protection against external factors and it impacted the objective of the mitigating systems cornerstone. The failure to provide adequate instructions in the alternate shutdown procedure to promptly prevent the draining of the RWST to the containment sump could have adversely impacted the operators' ability to promptly take appropriate actions and could have complicated safe shutdown in the event of a fire. The finding was of very low safety significance based on Phase 2 and Phase 3 SDP evaluations completed by the Region III senior reactor analyst (SRA) in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process." (Section 1R05.2)

Inspection Report# : [2007002](#) (*pdf*)

Significance:  Jan 16, 2007

Identified By: NRC

Item Type: FIN Finding

FAILURE TO HAVE SETPOINT CONTROL OF THE CONSTANT LEVEL OILERS ON SAFETY-RELATED PUMPS

The inspectors identified a finding of very low safety significance associated with the failure to maintain control of the setpoints for constant level oilers. This condition increased the challenges to the proper functioning of the lubricating oil and thus to the bearings to the safety-related pumps.

This finding was considered more than minor because of the potential for the degradation of oil/bearings to safety-related components which would increase their unavailability and unreliability. This finding was of very low safety significance because no bearings had been damaged due to the high or low oil levels despite operating in this condition for many years and the oil had only been moderately impacted. The licensee's corrective actions included assessing the setpoints of other safety related and non-safety related pumps, verifying no pumps had been damaged, and revising the work order template to include the reference to the corporate procedure for the setting of constant level oilers. No violation of NRC requirements occurred.

Inspection Report# : [2006005](#) (*pdf*)

Significance:  Dec 01, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Errors in Unverified Design Input Data Used to Determine the Impact of Core Power Uprate on Medium Voltage Loads

Green. The team identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance. The power uprate electrical loading calculation used incorrect design input for the 4160 Vac engineered safety features (ESF) distribution system load analysis. Specifically, the licensee's contract engineering organization failed to adequately verify design input data used to determine brake horsepower loading. The incorrect horsepower values were subsequently used in revising the 4160 Vac ESF distribution system power analysis. The licensee's acceptance review did not identify the problem. Using corrected values, the licensee determined that the reduction in load margin was acceptable based on a revised loading calculation prepared informally during the

inspection.

The finding was more than minor because failing to correctly identify, verify, and input the correct design data into the electrical power analysis program resulted in the load conditions not being adequately evaluated, resulting in inaccurate and non-conservative determination of loading and load margin for the 4160 Vac ESF buses. The finding was of very low safety significance based on the results of the licensee's analysis and screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2006009](#) (*pdf*)

Significance:  Dec 01, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Acceptance Criteria for Safety Injection Pump NPSH Not Met

Green. The team identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance. Specifically, the calculation for evaluating the net positive suction head (NPSH) for the safety injection pump contained errors and failed to demonstrate that the acceptance criteria was met. To demonstrate operability, the licensee performed a preliminary calculation, using a less conservative pump flow value along with correcting the identified errors.

The finding was more than minor because the calculation of record was not adequate and failed to demonstrate that the NPSH available met design basis requirements. The finding was of very low safety significance based on the results of the licensee's corrected analysis and screened as Green using the SDP Phase 1 screening worksheet. The cause of the finding was related to the cross-cutting aspect of human performance.

Inspection Report# : [2006009](#) (*pdf*)

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO MAINTAIN FIRE BARRIERS IN ACCORDANCE WITH FIRE PROTECTION PROGRAM.

The inspectors identified a Non-Cited Violation of Byron Facility Operating License Nos. NPF-37 and NPF-66, Condition 2.c.6, for failing to maintain the firewall separating the Auxiliary Building from the penetration area in accordance with the approved fire protection program. Fire seals were required to be provided in this firewall, except where an evaluation had been performed and approved to allow a deviation. Two sleeves containing fire seals had pulling ropes embedded in the fire seals in the firewall separating the Auxiliary Building General Area 401 from the Unit 1 piping penetration area; also, no evaluation or exemption existed to justify this configuration. The licensee entered the issue into its corrective action program for resolution and implemented compensatory measures that included hourly fire watches.

This finding was more than minor because it affected the Mitigating Systems Cornerstone objective to ensure that external factors (i.e., fire, flood, etc) do not impact the availability, reliability, and capability of systems that respond to initiating events. The finding was of very low safety significance because the fire seals were in small diameter sleeves that traveled a distance of 45 feet and had two 90 degree bends and the location of combustibles were positioned such that the piping penetration end of the fire seals would not be subject to direct flame impingement.

Inspection Report# : [2006004](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO POST AND CONTROL A HIGH RADIATION AREA.

An inspector-identified finding of very low safety significance and two associated Non-Cited Violations of NRC requirements were identified for the failure to post and control access to High Radiation Areas, as required by 10 CFR Part 20, to notify individuals of the radiological hazard present and to prevent the unauthorized entry to such areas. Specifically, the entrance to the Unit 1 Filter Valve Aisle located on the 383' elevation of the Auxiliary Building, a high radiation area with a radiation dose rate of approximately 135 millirem in one hour, was not posted or controlled by any of the methods described in 10 CFR 20.1902, 10 CFR 20.1601, or Technical Specification 5.7.1.

The issue was more than minor because the issue was associated with the Program/Process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The issue represents a finding of very low safety significance because the finding did not constitute an ALARA or work control issue, did not result in an overexposure or the substantial potential for an overexposure, and did not compromise the licensee's ability to assess dose. Non-Cited Violations of 10 CFR 20.1902 and 10 CFR 20.1601 were identified for the failure to post and control access to high radiation areas. Corrective actions taken by the licensee for this finding included establishing control through postings and barricades. The cause of this finding is related to the cross-cutting element of human performance.

Inspection Report# : [2006004](#) (*pdf*)

Public Radiation Safety

Significance:  Sep 30, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE THE POTENTIAL RADIOLOGICAL HAZARD ASSOCIATED WITH THE LEAKAGE OF WATER FROM THE VACUUM BREAKER VALVE VAULT.

An inspector-identified finding of very low safety significance and an associated Non-Cited Violation of NRC requirements were identified for the failure to perform surveys that are necessary to comply with the regulations in 10 CFR Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present prior to pumping liquids from blowdown line vacuum breaker valve vaults to the environment. Specifically, the conditions found at 0CW276 (vault No. 6) on July 7, 2005, were outside the parameters of the original assessment, and the licensee did not evaluate the change of conditions for the potential radiological hazards to ensure compliance with 10 CFR 20.1301, which limits radiation exposure to a member of the public to 0.1 rem.

The issue was more than minor because the issue was associated with the Program/Process attribute of the Public Radiation Safety Cornerstone and affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. Since the releases were limited to licensee owned property, the licensee has not measured any licensed material beyond its property line, and the licensee's REMP has a monitoring well in the vicinity of the blowdown lines, the finding did not represent a failure to assess dose nor a failure to assess the environmental impact. Consequently, the finding was determined to be of very low safety significance. A Non-Cited Violation of 10 CFR 20.1501 was identified for the failure to make surveys to ensure compliance with 10 CFR 20.1301, which limits radiation exposure to a member of the public to 0.1 rem. Corrective actions taken by the licensee for this finding included performing surveys of the soil surrounding the vacuum breaker vault for radionuclides, establishing additional groundwater monitoring wells, sealing the vacuum breaker vaults, and installing of an automated leak detection system. The cause of this finding is related to the cross-cutting element of problem identification and resolution.

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.

Miscellaneous

Last modified : August 24, 2007

Byron 2

3Q/2007 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FIRE PROOF STRUCTURAL STEEL BEAMS TO ACHIEVE A 3-HOUR FIRE RATING.

The inspectors identified an NCV of Byron Station's Operating License Condition 2.C.6 for failure to maintain a 3-hour rated firewall in the control room heating, ventilation and air conditioning (HVAC) equipment room.

Specifically, the walls between the upper cable spreading rooms and the control room HVAC equipment were not fireproofed to achieve a 3-hour rating as required by the fire protection report and applicable plant drawings. The licensee entered this issue into its corrective action program for resolution and implemented compensatory measures that included hourly fire watches.

This finding was more than minor because it was associated with the external factor attribute of the Initiating Events cornerstone related to fire and it affected the cornerstone's objective to limit the likelihood of fire that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was of very low safety significance because there were no fire ignition source scenarios that would have caused the structural steel beams to weaken and the ceiling to collapse.

Inspection Report# : [2007003](#) (*pdf*)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM A MT EXAMINATION IN ACCORDANCE WITH ASME SECTION XI.

The inspectors identified an NCV of 10 CFR 50.55(a)(g)(4) for failure to perform a Magnetic Particle (MT) examination of the full required exam surface on a steam generator (SG) main feedwater nozzle weld (2RC01BA) in accordance with the American Society of Mechanical Engineers (ASME) Section XI Code. The examiners subsequently completed the MT examination of the required area and the issue was entered into the licensee's corrective action program.

This finding was greater than minor significance because it was associated with the Initiating Events cornerstone attribute of "Equipment Performance," and affected the cornerstone objective to limit those events (reactor coolant system barrier failure) which upset plant safety and challenge safety systems. Absent NRC intervention, the licensee would not have performed the full Code-required exam of the weld for an indefinite period of service which would have placed the reactor coolant pressure boundary at increased risk for undetected cracking, leakage, or component failure. This finding was of very low safety significance because a qualified examination was subsequently performed with no relevant indications detected. In particular, it did not result in the loss of function of the mitigating system.

Inspection Report# : [2007003](#) (*pdf*)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

DESIGN BASIS ANALYSIS FOR THE POSTULATED DROP OF A REACTOR VESSEL HEAD DURING REFUELING WAS NOT UP-TO-DATE.

The inspectors identified a finding of very low safety significance and associated NCV for a failure to establish measures to assure that regulatory requirements and the design basis were correctly translated into procedures as required by 10 CFR 50 Appendix B Criterion III. Specifically, the procedures related to the reactor vessel head lift did not correctly reflect in a non conservative direction the design lift height. As immediate corrective actions, the

licensee incorporated compensatory measures to lower reactor cavity water level during the head lift to ensure the actual airdrop distance was bounded by the analysis.

It was more than minor because it involved the equipment performance attribute of the Initiating Events Cornerstone Objective. The finding was determined to be of very low safety significance (Green) because as part of the additional corrective actions, the licensee's subsequent calculations showed the lift height was acceptable due to margin gained from the much heavier head weight assumed in their analysis.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, operating experience because the licensee failed to implement and institutionalize operating experience through changes to their procedures (P.2(b)).

Inspection Report# : [2007003](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

DISCREPANCIES WITH TORNADO ANALYSIS

The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving the ultimate heat sink (UHS) capability of mitigating the effects of tornado missiles. Specifically, the inspectors identified that the licensee failed to demonstrate that the ultimate heat sink can withstand the effects of tornado borne missiles rendering all cooling tower fans out of service. In addition, the licensee failed to update their current analysis to show the higher heat load generated as a result of power up-rate, steam generator replacement and the ultimate heat sink design basis reconstitution. In response to the issue, the licensee implemented compensatory actions including allowing only one fan to be inoperable at a time and performing an operability evaluation.

The finding was more than minor because the temperature of the UHS could have exceeded its design value in the event of a tornado and a loss of all cooling towers. The finding was of very low safety significance because the inspectors determined that the UHS was in a non-conforming but operable condition and the issue screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2007004](#) (*pdf*)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

ALTERNATIVE SHUTDOWN USING THE REMOTE SHUTDOWN PANEL.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to ensure that all testing necessary to demonstrate that the Unit 1 and 2 remote shutdown panels (RSPs) will perform satisfactorily in-service be identified and conducted. Specifically, the licensee failed to periodically test applicable (i.e., important to safety) components (e.g., control switches) on the RSPs to ensure the operability and functional performance of the RSP components and the operability of their associated systems as a whole. The licensee's corrective actions were to immediately begin testing of the instrumentation and controls located at the RSP and to continue the testing in accordance with a schedule that would allow timely completion.

The finding was more than minor because the finding was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was of very low safety significance because the finding did not represent an actual loss of the instrumentation indications and control functions at the RSP, since the 1B0A PRI-5 and 2B0A PRI-5 procedures' "Response Not

Obtained” column provided an alternative shutdown capability method using local manual actions and the Fire Hazards Panel.

Inspection Report# : [2007003 \(pdf\)](#)

Significance:  Mar 31, 2007

Identified By: NRC

Item Type: FIN Finding

INADEQUATE SETPOINT CONTROL OF THE OIL LEVEL TO SAFETY RELATED PUMPS.

The inspectors identified a finding for the licensee’s failure to maintain setpoint control of the constant level oilers. Specifically, the licensee did not incorporate the vendor’s recommendation on setting the oil level for the essential service water pumps. This condition increased the challenges to the proper functioning of the lubricating oil and thus to the bearings of the safety-related pumps. The licensee subsequently reset the oil level for the pumps to the recommended setting and entered this issue into their corrective action program.

this finding is more than minor because of the potential for degradation of oil and bearings to safety related components, which could adversely affect their availability and reliability. This finding is of very low safety significance because no bearings had been damaged due to the high oil levels despite operating in this condition for many years and no significant oil degradation had occurred. The inspectors did not identify a violation of regulatory requirements. However, the cause of the finding is related to the cross-cutting element of problem identification and resolution, particularly the thoroughness of the extent of condition review. (Section 1R04.2)

Inspection Report# : [2007002 \(pdf\)](#)

Significance:  Mar 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

ADEQUACY OF SAFE SHUTDOWN PROCEDURES TO ADDRESS DRAINING OF THE RWST.

The inspectors identified a Non-Cited Violation (NCV) of the Byron Station Operating License for the failure to have adequate alternate safe shutdown procedure. Specifically, licensee’s procedure BOP FR-1, “Fire Response Guidelines,” did not include adequate steps and instructions to prevent the draining of the refueling water storage tank (RWST) into the containment sump in the event of a fire in the auxiliary electrical equipment room (AEER) or the control room. The licensee implemented appropriate procedure changes for both the AEER and control room fire zones to isolate all potential RWST drain paths.

The finding is greater than minor because it affected the attribute of procedure quality for protection against external factors and it impacted the objective of the mitigating systems cornerstone. The failure to provide adequate instructions in the alternate shutdown procedure to promptly prevent the draining of the RWST to the containment sump could have adversely impacted the operators’ ability to promptly take appropriate actions and could have complicated safe shutdown in the event of a fire. The finding was of very low safety significance based on Phase 2 and Phase 3 SDP evaluations completed by the Region III senior reactor analyst (SRA) in accordance with IMC 0609, Appendix F, “Fire Protection Significance Determination Process.” (Section 1R05.2)

Inspection Report# : [2007002 \(pdf\)](#)

Significance:  Jan 16, 2007

Identified By: NRC

Item Type: FIN Finding

FAILURE TO HAVE SETPOINT CONTROL OF THE CONSTANT LEVEL OILERS ON SAFETY-RELATED PUMPS

The inspectors identified a finding of very low safety significance associated with the failure to maintain control of the setpoints for constant level oilers. This condition increased the challenges to the proper functioning of the lubricating oil and thus to the bearings to the safety-related pumps.

This finding was considered more than minor because of the potential for the degradation of oil/bearings to safety-

related components which would increase their unavailability and unreliability. This finding was of very low safety significance because no bearings had been damaged due to the high or low oil levels despite operating in this condition for many years and the oil had only been moderately impacted. The licensee's corrective actions included assessing the setpoints of other safety related and non-safety related pumps, verifying no pumps had been damaged, and revising the work order template to include the reference to the corporate procedure for the setting of constant level oilers. No violation of NRC requirements occurred.

Inspection Report# : [2006005](#) (*pdf*)

Significance:  Dec 01, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Errors in Unverified Design Input Data Used to Determine the Impact of Core Power Uprate on Medium Voltage Loads

Green. The team identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance. The power uprate electrical loading calculation used incorrect design input for the 4160 Vac engineered safety features (ESF) distribution system load analysis. Specifically, the licensee's contract engineering organization failed to adequately verify design input data used to determine brake horsepower loading. The incorrect horsepower values were subsequently used in revising the 4160 Vac ESF distribution system power analysis. The licensee's acceptance review did not identify the problem. Using corrected values, the licensee determined that the reduction in load margin was acceptable based on a revised loading calculation prepared informally during the inspection.

The finding was more than minor because failing to correctly identify, verify, and input the correct design data into the electrical power analysis program resulted in the load conditions not being adequately evaluated, resulting in inaccurate and non-conservative determination of loading and load margin for the 4160 Vac ESF buses. The finding was of very low safety significance based on the results of the licensee's analysis and screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2006009](#) (*pdf*)

Significance:  Dec 01, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Acceptance Criteria for Safety Injection Pump NPSH Not Met

Green. The team identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance. Specifically, the calculation for evaluating the net positive suction head (NPSH) for the safety injection pump contained errors and failed to demonstrate that the acceptance criteria was met. To demonstrate operability, the licensee performed a preliminary calculation, using a less conservative pump flow value along with correcting the identified errors.

The finding was more than minor because the calculation of record was not adequate and failed to demonstrate that the NPSH available met design basis requirements. The finding was of very low safety significance based on the results of the licensee's corrected analysis and screened as Green using the SDP Phase 1 screening worksheet. The cause of the finding was related to the cross-cutting aspect of human performance.

Inspection Report# : [2006009](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

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.

Miscellaneous

Last modified : December 07, 2007

Byron 2

4Q/2007 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FIRE PROOF STRUCTURAL STEEL BEAMS TO ACHIEVE A 3-HOUR FIRE RATING.

The inspectors identified an NCV of Byron Station's Operating License Condition 2.C.6 for failure to maintain a 3-hour rated firewall in the control room heating, ventilation and air conditioning (HVAC) equipment room.

Specifically, the walls between the upper cable spreading rooms and the control room HVAC equipment were not fireproofed to achieve a 3-hour rating as required by the fire protection report and applicable plant drawings. The licensee entered this issue into its corrective action program for resolution and implemented compensatory measures that included hourly fire watches.

This finding was more than minor because it was associated with the external factor attribute of the Initiating Events cornerstone related to fire and it affected the cornerstone's objective to limit the likelihood of fire that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was of very low safety significance because there were no fire ignition source scenarios that would have caused the structural steel beams to weaken and the ceiling to collapse.

Inspection Report# : [2007003](#) (*pdf*)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM A MT EXAMINATION IN ACCORDANCE WITH ASME SECTION XI.

The inspectors identified an NCV of 10 CFR 50.55(a)(g)(4) for failure to perform a Magnetic Particle (MT) examination of the full required exam surface on a steam generator (SG) main feedwater nozzle weld (2RC01BA) in accordance with the American Society of Mechanical Engineers (ASME) Section XI Code. The examiners subsequently completed the MT examination of the required area and the issue was entered into the licensee's corrective action program.

This finding was greater than minor significance because it was associated with the Initiating Events cornerstone attribute of "Equipment Performance," and affected the cornerstone objective to limit those events (reactor coolant system barrier failure) which upset plant safety and challenge safety systems. Absent NRC intervention, the licensee would not have performed the full Code-required exam of the weld for an indefinite period of service which would have placed the reactor coolant pressure boundary at increased risk for undetected cracking, leakage, or component failure. This finding was of very low safety significance because a qualified examination was subsequently performed with no relevant indications detected. In particular, it did not result in the loss of function of the mitigating system.

Inspection Report# : [2007003](#) (*pdf*)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

DESIGN BASIS ANALYSIS FOR THE POSTULATED DROP OF A REACTOR VESSEL HEAD DURING REFUELING WAS NOT UP-TO-DATE.

The inspectors identified a finding of very low safety significance and associated NCV for a failure to establish measures to assure that regulatory requirements and the design basis were correctly translated into procedures as required by 10 CFR 50 Appendix B Criterion III. Specifically, the procedures related to the reactor vessel head lift did not correctly reflect in a non conservative direction the design lift height. As immediate corrective actions, the

licensee incorporated compensatory measures to lower reactor cavity water level during the head lift to ensure the actual airdrop distance was bounded by the analysis.

It was more than minor because it involved the equipment performance attribute of the Initiating Events Cornerstone Objective. The finding was determined to be of very low safety significance (Green) because as part of the additional corrective actions, the licensee's subsequent calculations showed the lift height was acceptable due to margin gained from the much heavier head weight assumed in their analysis.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, operating experience because the licensee failed to implement and institutionalize operating experience through changes to their procedures (P.2(b)).

Inspection Report# : [2007003](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

DISCREPANCIES WITH TORNADO ANALYSIS

The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving the ultimate heat sink (UHS) capability of mitigating the effects of tornado missiles. Specifically, the inspectors identified that the licensee failed to demonstrate that the ultimate heat sink can withstand the effects of tornado borne missiles rendering all cooling tower fans out of service. In addition, the licensee failed to update their current analysis to show the higher heat load generated as a result of power up-rate, steam generator replacement and the ultimate heat sink design basis reconstitution. In response to the issue, the licensee implemented compensatory actions including allowing only one fan to be inoperable at a time and performing an operability evaluation.

The finding was more than minor because the temperature of the UHS could have exceeded its design value in the event of a tornado and a loss of all cooling towers. The finding was of very low safety significance because the inspectors determined that the UHS was in a non-conforming but operable condition and the issue screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2007004](#) (*pdf*)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

ALTERNATIVE SHUTDOWN USING THE REMOTE SHUTDOWN PANEL.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to ensure that all testing necessary to demonstrate that the Unit 1 and 2 remote shutdown panels (RSPs) will perform satisfactorily in-service be identified and conducted. Specifically, the licensee failed to periodically test applicable (i.e., important to safety) components (e.g., control switches) on the RSPs to ensure the operability and functional performance of the RSP components and the operability of their associated systems as a whole. The licensee's corrective actions were to immediately begin testing of the instrumentation and controls located at the RSP and to continue the testing in accordance with a schedule that would allow timely completion.

The finding was more than minor because the finding was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was of very low safety significance because the finding did not represent an actual loss of the instrumentation indications and control functions at the RSP, since the 1B0A PRI-5 and 2B0A PRI-5 procedures' "Response Not

Obtained” column provided an alternative shutdown capability method using local manual actions and the Fire Hazards Panel.

Inspection Report# : [2007003 \(pdf\)](#)

Significance:  Mar 31, 2007

Identified By: NRC

Item Type: FIN Finding

INADEQUATE SETPOINT CONTROL OF THE OIL LEVEL TO SAFETY RELATED PUMPS.

The inspectors identified a finding for the licensee’s failure to maintain setpoint control of the constant level oilers. Specifically, the licensee did not incorporate the vendor’s recommendation on setting the oil level for the essential service water pumps. This condition increased the challenges to the proper functioning of the lubricating oil and thus to the bearings of the safety-related pumps. The licensee subsequently reset the oil level for the pumps to the recommended setting and entered this issue into their corrective action program.

this finding is more than minor because of the potential for degradation of oil and bearings to safety related components, which could adversely affect their availability and reliability. This finding is of very low safety significance because no bearings had been damaged due to the high oil levels despite operating in this condition for many years and no significant oil degradation had occurred. The inspectors did not identify a violation of regulatory requirements. However, the cause of the finding is related to the cross-cutting element of problem identification and resolution, particularly the thoroughness of the extent of condition review. (Section 1R04.2)

Inspection Report# : [2007002 \(pdf\)](#)

Significance:  Mar 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

ADEQUACY OF SAFE SHUTDOWN PROCEDURES TO ADDRESS DRAINING OF THE RWST.

The inspectors identified a Non-Cited Violation (NCV) of the Byron Station Operating License for the failure to have adequate alternate safe shutdown procedure. Specifically, licensee’s procedure BOP FR-1, “Fire Response Guidelines,” did not include adequate steps and instructions to prevent the draining of the refueling water storage tank (RWST) into the containment sump in the event of a fire in the auxiliary electrical equipment room (AEER) or the control room. The licensee implemented appropriate procedure changes for both the AEER and control room fire zones to isolate all potential RWST drain paths.

The finding is greater than minor because it affected the attribute of procedure quality for protection against external factors and it impacted the objective of the mitigating systems cornerstone. The failure to provide adequate instructions in the alternate shutdown procedure to promptly prevent the draining of the RWST to the containment sump could have adversely impacted the operators’ ability to promptly take appropriate actions and could have complicated safe shutdown in the event of a fire. The finding was of very low safety significance based on Phase 2 and Phase 3 SDP evaluations completed by the Region III senior reactor analyst (SRA) in accordance with IMC 0609, Appendix F, “Fire Protection Significance Determination Process.” (Section 1R05.2)

Inspection Report# : [2007002 \(pdf\)](#)

Significance:  Jan 16, 2007

Identified By: NRC

Item Type: FIN Finding

FAILURE TO HAVE SETPOINT CONTROL OF THE CONSTANT LEVEL OILERS ON SAFETY-RELATED PUMPS

The inspectors identified a finding of very low safety significance associated with the failure to maintain control of the setpoints for constant level oilers. This condition increased the challenges to the proper functioning of the lubricating oil and thus to the bearings to the safety-related pumps.

This finding was considered more than minor because of the potential for the degradation of oil/bearings to safety-

related components which would increase their unavailability and unreliability. This finding was of very low safety significance because no bearings had been damaged due to the high or low oil levels despite operating in this condition for many years and the oil had only been moderately impacted. The licensee's corrective actions included assessing the setpoints of other safety related and non-safety related pumps, verifying no pumps had been damaged, and revising the work order template to include the reference to the corporate procedure for the setting of constant level oilers. No violation of NRC requirements occurred.

Inspection Report# : [2006005](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

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.

Miscellaneous

Last modified : February 04, 2008

Byron 2

1Q/2008 Plant Inspection Findings

Initiating Events

Significance: N/A Mar 28, 2008

Identified By: NRC

Item Type: VIO Violation

Failure to Implement Timely Corrective Actions for Degraded SX Riser Piping

•White. The team identified an violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective action," associated with the licensee's failure to take timely corrective actions after identification of the corroded essential service water system riser pipes. Specifically, the licensee failed to take timely actions to remove the external corrosion layer present on the riser pipes to support sufficient wall thickness measurements to assess the significance of the pipe wall loss. Consequently, the licensee operated the plant for an extended period of time with a substantial loss of pipe wall on the essential service water riser piping while corrosion proceeded to the point that a through-wall leak developed on the 0C essential service water riser pipe.

The cause of this apparent violation was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to make conservative assumptions in decisions affecting the integrity of the essential service water riser piping. The presumption of pipe integrity was not based on sufficient information to be able to demonstrate that the proposed action/decision to leave these risers in service was safe. The licensee subsequently completed a plant shutdown and replaced the degraded portions of these essential service water system riser pipes.

The finding associated with this apparent violation was greater than minor because the degraded essential service water piping condition resulted in an increase in the likelihood of the loss of the essential service water system due to pipe failures, which directly affected the Initiating Events Cornerstone. It was also associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding associated with this apparent violation was assessed using a Phase 3 analysis in accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," and is preliminarily determined to have low to moderate safety significance (White). (Section 4OA3.3)

Inspection Report# : [2007009](#) (pdf)

Significance: **W** Mar 28, 2008

Identified By: NRC

Item Type: VIO Violation

Inadequate Design Margins for Continued Operation of SX Riser Pipes

•White. The team identified a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to verify the adequacy of the methodology and design inputs used to support licensee decisions to accept the degraded 0B, 0E and 0H essential service water system riser pipes for continued service. Specifically, the licensee failed to evaluate for compressive loads (e.g., buckling), use the applicable Code allowable stress, apply Code equations which account for thermal loads, and failed to correctly apply equations for checking the pipe functional capability. Consequently, the licensee failed to establish adequate design margins for continued service of the 0E, 0H and 0B essential service water system riser which resulted in extended plant operation with degraded SX riser pipes.

The cause of this apparent violation was related to the Resources Component (Item H.2(a) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to maintain plant safety by maintenance of design margins. Specifically, these degraded riser pipes remained in-service without establishing adequate design margins in the engineering evaluations to justify continued service. The licensee subsequently completed a plant shutdown and replaced the degraded portions of these essential service water system riser pipes.

The finding associated with this apparent violation was greater than minor because the degraded essential service water piping condition resulted in an increase in the likelihood of the loss of the essential service water system due to pipe failures, which directly affected the Initiating Events Cornerstone. It was also associated with the Equipment

Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding associated with this apparent violation was assessed using a Phase 3 analysis in accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," and is preliminarily determined to have low to moderate safety significance (White). (Section 40A3.4)

Inspection Report# : [2007009](#) (pdf)

Significance:  Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Unauthorized Transient Combustibles

The inspectors identified an NCV, having very low safety significance, of license condition 2.C(6) in that the licensee failed to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the inspectors identified that unauthorized transient combustibles were left adjacent to a cable riser in the auxiliary building contrary to implementing fire protection procedures.

Inspection Report# : [2008006](#) (pdf)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FIRE PROOF STRUCTURAL STEEL BEAMS TO ACHIEVE A 3-HOUR FIRE RATING.

The inspectors identified an NCV of Byron Station's Operating License Condition 2.C.6 for failure to maintain a 3-hour rated firewall in the control room heating, ventilation and air conditioning (HVAC) equipment room. Specifically, the walls between the upper cable spreading rooms and the control room HVAC equipment were not fireproofed to achieve a 3-hour rating as required by the fire protection report and applicable plant drawings. The licensee entered this issue into its corrective action program for resolution and implemented compensatory measures that included hourly fire watches.

This finding was more than minor because it was associated with the external factor attribute of the Initiating Events cornerstone related to fire and it affected the cornerstone's objective to limit the likelihood of fire that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was of very low safety significance because there were no fire ignition source scenarios that would have caused the structural steel beams to weaken and the ceiling to collapse.

Inspection Report# : [2007003](#) (pdf)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM A MT EXAMINATION IN ACCORDANCE WITH ASME SECTION XI.

The inspectors identified an NCV of 10 CFR 50.55(a)(g)(4) for failure to perform a Magnetic Particle (MT) examination of the full required exam surface on a steam generator (SG) main feedwater nozzle weld (2RC01BA) in accordance with the American Society of Mechanical Engineers (ASME) Section XI Code. The examiners subsequently completed the MT examination of the required area and the issue was entered into the licensee's corrective action program.

This finding was greater than minor significance because it was associated with the Initiating Events cornerstone attribute of "Equipment Performance," and affected the cornerstone objective to limit those events (reactor coolant system barrier failure) which upset plant safety and challenge safety systems. Absent NRC intervention, the licensee would not have performed the full Code-required exam of the weld for an indefinite period of service which would have placed the reactor coolant pressure boundary at increased risk for undetected cracking, leakage, or component failure. This finding was of very low safety significance because a qualified examination was subsequently performed with no relevant indications detected. In particular, it did not result in the loss of function of the mitigating system.

Inspection Report# : [2007003](#) (pdf)

Significance: G Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

DESIGN BASIS ANALYSIS FOR THE POSTULATED DROP OF A REACTOR VESSEL HEAD DURING REFUELING WAS NOT UP-TO-DATE.

The inspectors identified a finding of very low safety significance and associated NCV for a failure to establish measures to assure that regulatory requirements and the design basis were correctly translated into procedures as required by 10 CFR 50 Appendix B Criterion III. Specifically, the procedures related to the reactor vessel head lift did not correctly reflect in a non conservative direction the design lift height. As immediate corrective actions, the licensee incorporated compensatory measures to lower reactor cavity water level during the head lift to ensure the actual airdrop distance was bounded by the analysis.

It was more than minor because it involved the equipment performance attribute of the Initiating Events Cornerstone Objective. The finding was determined to be of very low safety significance (Green) because as part of the additional corrective actions, the licensee's subsequent calculations showed the lift height was acceptable due to margin gained from the much heavier head weight assumed in their analysis.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, operating experience because the licensee failed to implement and institutionalize operating experience through changes to their procedures (P.2(b)).

Inspection Report# : [2007003](#) (*pdf*)

Mitigating Systems

Significance: G Mar 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Operating Experience Procedure Not Followed for Service Water Corrosion Event

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to follow Procedure LS-AA-115, "Operating Experience Procedure," and implement corrective actions in response to an industry service water piping corrosion event which caused a service water system failure at a foreign reactor plant. Consequently, the licensee failed to implement actions to fix existing procedural controls so that a similar service water system corrosion and failure event would be precluded at the Byron Station. The cause of this finding was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee did not make conservative assumptions in decisions affecting the integrity of this SX piping. Specifically, the licensee's decision to not implement changes to station procedures and to not perform training for personnel on this service water operating experience event was not based on sufficient information to demonstrate that the decision was safe (e.g., would preclude a similar event from occurring at the Byron Station). The licensee entered this issue into the corrective action program.

This finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening" because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee's failure to implement corrective actions associated with the Byron programs for maintenance of the service water system adversely affects system reliability. The team evaluated the finding in accordance with IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered "No" to each of the screening questions, because the failure to incorporate corrective measures for this applicable operating experience event did not directly contribute to the delay in correcting the degraded SX riser pipe condition. Specifically, each of the degraded SX riser pipes had been identified and placed in the corrective action system by June of 2007, shortly after this operating experience evaluation was performed. Therefore, the finding screened as having very low safety significance. (Section 40A3.3)

Inspection Report# : [2007009](#) (*pdf*)

Significance: G Mar 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

TRM Change Bypasses Procedure Change and Safety Evaluation Processes

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” for the licensee’s failure to ensure that Revision 54 of the Technical Requirements Manual was appropriate to the circumstances. Revision 54 of the Technical Requirements Manual was not appropriate to the circumstances, because it allowed deviations from the Technical Requirement Manual requirements without following the procedure change process and 10 CFR 50.59 review process. The cause of this finding was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to make conservative assumptions in decisions affecting the procedure adherence for safety related systems. Specifically, the licensee’s assumptions for implementing Revision 54 were not based on a comprehensive review of system alignments for all possible Technical Requirements Manual deviations, and thus did not demonstrate that the proposed deviations allowed would be safe. The licensee subsequently removed the option to deviate from the Technical Requirements Manual and entered this issue into the corrective action program.

This finding was determined to be more than minor in accordance with IMC 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening,” because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Absent NRC intervention, the licensee’s procedure option could have allowed unsafe deviations from the Technical Requirements Manual or allowed actions which would have required prior NRC approval (e.g., license amendment). The team evaluated the finding in accordance with IMC 0609.04 “Phase 1 – Initial Screening and Characterization of Findings.” Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered “No” to each of the screening questions, because the NRC identified this deficient change prior to the licensee implementing any actions which adversely affected the structural integrity or operability of mitigating systems. Therefore, the finding screened as having very low safety significance. (Section 40A3.7)

Inspection Report# : [2007009](#) (*pdf*)

Significance: G Mar 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify Corroded 0SX138B Valve Bolting During VT-2 Examination

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to identify severely corroded bolts (condition adverse to quality) on the 0B SX basin suction supply isolation valve 0SX138B. The cause of this finding was related to the Corrective Action Program Component (Item P.1(a) of IMC 305) for the cross-cutting area of Problem Identification and Resolution, because the licensee staff failed to adopt an appropriate threshold for identifying issues. Specifically, the failure of the licensee VT-2 examiner to identify these degraded bolts was related to an excessively high threshold for problem identification. The licensee entered this issue into the corrective action program and replaced the bolts on the lower half of this valve which were subjected to the most severe corrosion.

This finding was determined to be more than minor in accordance with IMC 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening” because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Absent NRC intervention, the inappropriate threshold for identification of bolt corrosion as a condition adverse to quality would have gone uncorrected. This condition, if uncorrected, could lead to undetected corrosion failures in carbon steel components, affecting the reliability or capability of mitigating systems. The team evaluated the finding in accordance with IMC 0609.04, “Phase 1 – Initial Screening and Characterization of Findings.” Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered “No” to each of the screening questions, because the corrosion of the 0SX138B valve bolts had not yet challenged structural integrity or operability of the system. Therefore, the finding screened as having very low safety significance (Section 40A3.9).

Inspection Report# : [2007009](#) (*pdf*)

Significance: SL-IV Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform 10 CFR 50.59 Evaluations for Changes in Assumed Operator Times

The inspectors identified a Severity Level IV NCV, having very low safety significance, of 10 CFR 50.59 from the licensee's failure to provide a documented basis for determining that changes in how operator response times for postulated steam generator tube ruptures were credited in accident analyses did not require prior NRC approval.

Inspection Report# : [2008006](#) (pdf)

Significance:  Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Actions for Motor Operated Valve Breaker Magnetic Trip Settings

The inspectors identified an NCV having very low safety significance of 10 CFR Part 50, Appendix B, Criterion XVI for the licensee's failure to take prompt corrective actions for a condition adverse to quality. specifically, when it was identified in 2003 that the magnetic trip setting for breakers associated with three essential service water MOVs was below calculated required values for motor reversal conditions, the licensee failed to take interim corrective actions.

Inspection Report# : [2008006](#) (pdf)

Significance:  Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

UNIT 0 TRAIN A ESSENTIAL SERVICE WATER BASIN LEVEL DROP

The inspectors identified a Non-Cited Violation (NCV) of 10 CFR 50.65(a)(4), for the licensee's failure to conduct an adequate risk assessment of the maintenance performed at the Unit 0 Train B essential service water basin.

Specifically, the maintenance activities lowered the Unit 0 Train A Essential Service Water (SX) basin level and resulted in an unrecognized increase in the level of risk as determined by the licensee's shutdown safety management program. The primary cause of this finding was related to the cross-cutting area of human performance for failure to appropriately coordinate work activities between departments to assure plant and human performance. (H.3(b))

The finding was determined to be more than minor because the unplanned red risk condition was entered and the risk assessment had incorrect assumptions that had the potential to change the outcome of the assessment. The inspectors assessed the finding using Inspection Manual Chapter (IMC) 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," and determined the finding to be of very low safety significance (Green) because the safety function of the ultimate heat sink was not lost.

Inspection Report# : [2007005](#) (pdf)

Significance:  Sep 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

DISCREPANCIES WITH TORNADO ANALYSIS

The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving the ultimate heat sink (UHS) capability of mitigating the effects of tornado missiles.

Specifically, the inspectors identified that the licensee failed to demonstrate that the ultimate heat sink can withstand the effects of tornado borne missiles rendering all cooling tower fans out of service. In addition, the licensee failed to update their current analysis to show the higher heat load generated as a result of power up-rate, steam generator replacement and the ultimate heat sink design basis reconstitution. In response to the issue, the licensee implemented compensatory actions including allowing only one fan to be inoperable at a time and performing an operability evaluation.

The finding was more than minor because the temperature of the UHS could have exceeded its design value in the event of a tornado and a loss of all cooling towers. The finding was of very low safety significance because the inspectors determined that the UHS was in a non-conforming but operable condition and the issue screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2007004](#) (pdf)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

ALTERNATIVE SHUTDOWN USING THE REMOTE SHUTDOWN PANEL.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to ensure that all testing necessary to demonstrate that the Unit 1 and 2 remote shutdown panels (RSPs) will perform satisfactorily in-service be identified and conducted. Specifically, the licensee failed to periodically test applicable (i.e., important to safety) components (e.g., control switches) on the RSPs to ensure the operability and functional performance of the RSP components and the operability of their associated systems as a whole. The licensee's corrective actions were to immediately begin testing of the instrumentation and controls located at the RSP and to continue the testing in accordance with a schedule that would allow timely completion.

The finding was more than minor because the finding was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was of very low safety significance because the finding did not represent an actual loss of the instrumentation indications and control functions at the RSP, since the 1B0A PRI-5 and 2B0A PRI-5 procedures' "Response Not Obtained" column provided an alternative shutdown capability method using local manual actions and the Fire Hazards Panel.

Inspection Report# : [2007003](#) (*pdf*)

Barrier Integrity

Significance:  Mar 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

PLANT BARRIER IMPAIRMENT PERMIT NOT FOLLOWED

A finding of very low safety significance and associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee's failure to follow plant procedures. Plant maintenance workers left hoses running through a ventilation barrier door that caused the door to be open more than the allowed one inch. The licensee took immediate corrective actions which included closing the door and completing an evaluation which demonstrated operability of the door for ventilation purposes.

The finding was more than minor because, if left uncorrected, the issue would have become a more significant safety concern. The inspectors determined this finding represented a degradation of the radiological barrier function provided for the auxiliary building, therefore, the finding was considered to be of very low safety significance (Green). Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, Work Control - The licensee plans and coordinates work activities, consistent with nuclear safety

Inspection Report# : [2008002](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Mar 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLOGICAL HAZARDS FOR ALPHA RADIATION

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 for failure to implement procedures required to evaluate radiological hazards for alpha contamination. The corrective actions taken by the licensee included notification of RP supervision to reject all surveys with beta/gamma contamination in excess of 100,000 dpm/100 cm² that do include alpha information. The issue was entered in the licensee's corrective action program as AR 755986.

The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that the failure to fully evaluate the radiological hazards present in work areas could result in unplanned exposure to workers. The finding was determined to be of very low safety significance because it was not an As-Low-As-Is-Reasonably-Achievable (ALARA) planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding was caused by inadequate review and approval of survey data by RP Supervision. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Human Performance. Specifically, the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported.

Inspection Report# : [2008002](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Last modified : June 05, 2008

Byron 2

2Q/2008 Plant Inspection Findings

Initiating Events

Significance: N/A Mar 28, 2008

Identified By: NRC

Item Type: VIO Violation

Failure to Implement Timely Corrective Actions for Degraded SX Riser Piping

•White. The team identified an violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective action," associated with the licensee's failure to take timely corrective actions after identification of the corroded essential service water system riser pipes. Specifically, the licensee failed to take timely actions to remove the external corrosion layer present on the riser pipes to support sufficient wall thickness measurements to assess the significance of the pipe wall loss. Consequently, the licensee operated the plant for an extended period of time with a substantial loss of pipe wall on the essential service water riser piping while corrosion proceeded to the point that a through-wall leak developed on the 0C essential service water riser pipe.

The cause of this apparent violation was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to make conservative assumptions in decisions affecting the integrity of the essential service water riser piping. The presumption of pipe integrity was not based on sufficient information to be able to demonstrate that the proposed action/decision to leave these risers in service was safe. The licensee subsequently completed a plant shutdown and replaced the degraded portions of these essential service water system riser pipes.

The finding associated with this apparent violation was greater than minor because the degraded essential service water piping condition resulted in an increase in the likelihood of the loss of the essential service water system due to pipe failures, which directly affected the Initiating Events Cornerstone. It was also associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding associated with this apparent violation was assessed using a Phase 3 analysis in accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," and is preliminarily determined to have low to moderate safety significance (White). (Section 4OA3.3)

Inspection Report# : [2007009](#) (*pdf*)

Significance: **W** Mar 28, 2008

Identified By: NRC

Item Type: VIO Violation

Inadequate Design Margins for Continued Operation of SX Riser Pipes

•White. The team identified a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to verify the adequacy of the methodology and design inputs used to support licensee decisions to accept the degraded 0B, 0E and 0H essential service water system riser pipes for continued service. Specifically, the licensee failed to evaluate for compressive loads (e.g., buckling), use the applicable Code allowable stress, apply Code equations which account for thermal loads, and failed to correctly apply equations for checking the pipe functional capability. Consequently, the licensee failed to establish adequate design margins for continued service of the 0E, 0H and 0B essential service water system riser which resulted in extended plant operation with degraded SX riser pipes.

The cause of this apparent violation was related to the Resources Component (Item H.2(a) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to maintain plant safety by maintenance of design margins. Specifically, these degraded riser pipes remained in-service without establishing adequate design margins in the engineering evaluations to justify continued service. The licensee subsequently completed a plant shutdown and replaced the degraded portions of these essential service water system riser pipes.

The finding associated with this apparent violation was greater than minor because the degraded essential service water piping condition resulted in an increase in the likelihood of the loss of the essential service water system due to pipe failures, which directly affected the Initiating Events Cornerstone. It was also associated with the Equipment

Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding associated with this apparent violation was assessed using a Phase 3 analysis in accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," and is preliminarily determined to have low to moderate safety significance (White). (Section 40A3.4)

Inspection Report# : [2007009](#) (*pdf*)

Significance: **G** Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Unauthorized Transient Combustibles

The inspectors identified an NCV, having very low safety significance, of license condition 2.C(6) in that the licensee failed to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the inspectors identified that unauthorized transient combustibles were left adjacent to a cable riser in the auxiliary building contrary to implementing fire protection procedures.

Inspection Report# : [2008006](#) (*pdf*)

Mitigating Systems

Significance: **G** Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CORRECTLY TIGHTEN FITTINGS LEADS TO FAILURE TO START DURING A SURVEILLANCE OF THE 0B SX AMKEUP PUMP

A finding of very low safety significance and associated NCV of Technical Specification (TS) 5.4, "Procedures," was self-revealed on May 27, 2008, when the 0B essential service water (SX) system makeup pump failed to start during a planned monthly surveillance test. The pump failed to start due to a lack of fuel prime. The licensee determined that on April 29, 2008, the check valve on the fuel oil supply line between the day tank and the engine had been replaced as part of a routine preventive maintenance program. The check valve was found in the installed condition with a loose fitting. The loose fitting had leaked slowly allowing fuel oil to drain from the primed fuel oil supply line. The issue has been entered into the licensee's CAP (IR 779699). The licensee's corrective actions included repairing the check valve and associated deficiencies, as well as revising the maintenance procedure.

The finding was considered more than minor because there was an actual loss of safety function of a single train for greater than its TS allowed outage time. The finding was determined to be of very low safety significance during a Phase 3 SDP. The primary cause of this finding was related to the cross-cutting area of Human Performance for Work Practices (H.4(c)) because licensee supervisory oversight of work activity failed to ensure procedural compliance. (Section 1R12.1.b)

Inspection Report# : [2008003](#) (*pdf*)

Significance: **TBD** Jun 30, 2008

Identified By: NRC

Item Type: AV Apparent Violation

FAILURE TO PERFORM AN UPDATED RISK EVALUATION PRIOR TO SURVEILLANCE TESTING OF THE UNIT 1 TRAIN A DIESEL GENERATOR BASED ON EXISTING PLANT CONDITIONS

AV. The licensee identified an apparent violation of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," (a)(4) for failure to perform an updated risk evaluation prior to surveillance testing of the Unit 1 Train A emergency diesel generator (EDG) based on existing plant conditions. This failure resulted in an inadvertent entry into an elevated online risk condition for Unit 2. This issue has potential safety significance greater than very low safety significance for Unit 2, which may change pending completion of the SDP. This issue was entered into their corrective action program as IR 759945. The licensee immediately implemented the

compensatory measure of an operator stationed at the valve. They also took corrective actions to reassemble the valves and place them back in service.

The finding is more than minor in accordance with IMC 0612, Appendix E, Section 7, Example f, because the elevated overall plant risk when correctly accessed, is greater than 1.0E-6 Incremental Core Damage Probability (ICDP) and also put the plant into a higher risk category with additional risk management actions. The cause of this finding was related to the cross-cutting element of human performance for work control (H.3.(b)). (Section 1R13.1.b)

Inspection Report# : [2008003](#) (pdf)

Significance:  Mar 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Operating Experience Procedure Not Followed for Service Water Corrosion Event

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” for the licensee’s failure to follow Procedure LS-AA-115, “Operating Experience Procedure,” and implement corrective actions in response to an industry service water piping corrosion event which caused a service water system failure at a foreign reactor plant. Consequently, the licensee failed to implement actions to fix existing procedural controls so that a similar service water system corrosion and failure event would be precluded at the Byron Station. The cause of this finding was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee did not make conservative assumptions in decisions affecting the integrity of this SX piping. Specifically, the licensee’s decision to not implement changes to station procedures and to not perform training for personnel on this service water operating experience event was not based on sufficient information to demonstrate that the decision was safe (e.g., would preclude a similar event from occurring at the Byron Station). The licensee entered this issue into the corrective action program.

This finding was determined to be more than minor in accordance with IMC 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening” because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee’s failure to implement corrective actions associated with the Byron programs for maintenance of the service water system adversely affects system reliability. The team evaluated the finding in accordance with IMC 0609.04, “Phase 1 – Initial Screening and Characterization of Findings.” Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered “No” to each of the screening questions, because the failure to incorporate corrective measures for this applicable operating experience event did not directly contribute to the delay in correcting the degraded SX riser pipe condition. Specifically, each of the degraded SX riser pipes had been identified and placed in the corrective action system by June of 2007, shortly after this operating experience evaluation was performed. Therefore, the finding screened as having very low safety significance. (Section 40A3.3)

Inspection Report# : [2007009](#) (pdf)

Significance:  Mar 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

TRM Change Bypasses Procedure Change and Safety Evaluation Processes

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” for the licensee’s failure to ensure that Revision 54 of the Technical Requirements Manual was appropriate to the circumstances. Revision 54 of the Technical Requirements Manual was not appropriate to the circumstances, because it allowed deviations from the Technical Requirement Manual requirements without following the procedure change process and 10 CFR 50.59 review process. The cause of this finding was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to make conservative assumptions in decisions affecting the procedure adherence for safety related systems. Specifically, the licensee’s assumptions for implementing Revision 54 were not based on a comprehensive review of system alignments for all possible Technical Requirements Manual deviations, and thus did not demonstrate that the proposed deviations allowed would be safe. The licensee subsequently removed the option to deviate from the Technical Requirements Manual and entered this issue into the corrective action program.

This finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Absent NRC intervention, the licensee's procedure option could have allowed unsafe deviations from the Technical Requirements Manual or allowed actions which would have required prior NRC approval (e.g., license amendment). The team evaluated the finding in accordance with IMC 0609.04 "Phase 1 – Initial Screening and Characterization of Findings." Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered "No" to each of the screening questions, because the NRC identified this deficient change prior to the licensee implementing any actions which adversely affected the structural integrity or operability of mitigating systems. Therefore, the finding screened as having very low safety significance. (Section 40A3.7)

Inspection Report# : [2007009](#) (*pdf*)

Significance:  Mar 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify Corroded 0SX138B Valve Bolting During VT-2 Examination

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to identify severely corroded bolts (condition adverse to quality) on the 0B SX basin suction supply isolation valve 0SX138B. The cause of this finding was related to the Corrective Action Program Component (Item P.1(a) of IMC 305) for the cross-cutting area of Problem Identification and Resolution, because the licensee staff failed to adopt an appropriate threshold for identifying issues. Specifically, the failure of the licensee VT-2 examiner to identify these degraded bolts was related to an excessively high threshold for problem identification. The licensee entered this issue into the corrective action program and replaced the bolts on the lower half of this valve which were subjected to the most severe corrosion. This finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening" because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Absent NRC intervention, the inappropriate threshold for identification of bolt corrosion as a condition adverse to quality would have gone uncorrected. This condition, if uncorrected, could lead to undetected corrosion failures in carbon steel components, affecting the reliability or capability of mitigating systems. The team evaluated the finding in accordance with IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered "No" to each of the screening questions, because the corrosion of the 0SX138B valve bolts had not yet challenged structural integrity or operability of the system. Therefore, the finding screened as having very low safety significance (Section 40A3.9).

Inspection Report# : [2007009](#) (*pdf*)

Significance: SL-IV Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform 10 CFR 50.59 Evaluations for Changes in Assumed Operator Times

The inspectors identified a Severity Level IV NCV, having very low safety significance, of 10 CFR 50.59 from the licensee's failure to provide a documented basis for determining that changes in how operator response times for postulated steam generator tube ruptures were credited in accident analyses did not require prior NRC approval.

Inspection Report# : [2008006](#) (*pdf*)

Significance:  Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Actions for Motor Operated Valve Breaker Magnetic Trip Settings

The inspectors identified an NCV having very low safety significance of 10 CFR Part 50, Appendix B, Criterion XVI for the licensee's failure to take prompt corrective actions for a condition adverse to quality. specifically, when it was identified in 2003 that the magnetic trip setting for breakers associated with three essential service water MOVs was below calculated required values for motor reversal conditions, the licensee failed to take interim corrective actions.

G

Significance: Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

UNIT 0 TRAIN A ESSENTIAL SERVICE WATER BASIN LEVEL DROP

The inspectors identified a Non-Cited Violation (NCV) of 10 CFR 50.65(a)(4), for the licensee's failure to conduct an adequate risk assessment of the maintenance performed at the Unit 0 Train B essential service water basin.

Specifically, the maintenance activities lowered the Unit 0 Train A Essential Service Water (SX) basin level and resulted in an unrecognized increase in the level of risk as determined by the licensee's shutdown safety management program. The primary cause of this finding was related to the cross-cutting area of human performance for failure to appropriately coordinate work activities between departments to assure plant and human performance. (H.3(b))

The finding was determined to be more than minor because the unplanned red risk condition was entered and the risk assessment had incorrect assumptions that had the potential to change the outcome of the assessment. The inspectors assessed the finding using Inspection Manual Chapter (IMC) 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," and determined the finding to be of very low safety significance (Green) because the safety function of the ultimate heat sink was not lost.

Inspection Report# : [2007005](#) (pdf)

G

Significance: Sep 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

DISCREPANCIES WITH TORNADO ANALYSIS

The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance involving the ultimate heat sink (UHS) capability of mitigating the effects of tornado missiles.

Specifically, the inspectors identified that the licensee failed to demonstrate that the ultimate heat sink can withstand the effects of tornado borne missiles rendering all cooling tower fans out of service. In addition, the licensee failed to update their current analysis to show the higher heat load generated as a result of power up-rate, steam generator replacement and the ultimate heat sink design basis reconstitution. In response to the issue, the licensee implemented compensatory actions including allowing only one fan to be inoperable at a time and performing an operability evaluation.

The finding was more than minor because the temperature of the UHS could have exceeded its design value in the event of a tornado and a loss of all cooling towers. The finding was of very low safety significance because the inspectors determined that the UHS was in a non-conforming but operable condition and the issue screened as Green using the SDP Phase 1 screening worksheet.

Inspection Report# : [2007004](#) (pdf)

Barrier Integrity

G

Significance: Mar 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

PLANT BARRIER IMPAIRMENT PERMIT NOT FOLLOWED

A finding of very low safety significance and associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee's failure to follow plant procedures. Plant maintenance workers left hoses running through a ventilation barrier door that caused the door to be open more than the allowed one inch. The licensee took immediate corrective actions which included closing the door and completing an evaluation which demonstrated operability of the door for ventilation purposes.

The finding was more than minor because, if left uncorrected, the issue would have become a more significant safety

concern. The inspectors determined this finding represented a degradation of the radiological barrier function provided for the auxiliary building, therefore, the finding was considered to be of very low safety significance (Green). Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, Work Control - The licensee plans and coordinates work activities, consistent with nuclear safety

Inspection Report# : [2008002](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Mar 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLOGICAL HAZARDS FOR ALPHA RADIATION

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 for failure to implement procedures required to evaluate radiological hazards for alpha contamination. The corrective actions taken by the licensee included notification of RP supervision to reject all surveys with beta/gamma contamination in excess of 100,000 dpm/100 cm² that do include alpha information. The issue was entered in the licensee's corrective action program as AR 755986.

The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that the failure to fully evaluate the radiological hazards present in work areas could result in unplanned exposure to workers. The finding was determined to be of very low safety significance because it was not an As-Low-As-Is-Reasonably-Achievable (ALARA) planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding was caused by inadequate review and approval of survey data by RP Supervision. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Human Performance. Specifically, the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported.

Inspection Report# : [2008002](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Last modified : August 29, 2008

Byron 2

3Q/2008 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

ISOLATING CARBON DIOXIDE FIRE SUPPRESSION SYSTEM IN UPPER CABLE SPREADING ROOMS WITHOUT PRIOR NRC APPROVAL

A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Byron Unit 1 Operating License Condition 2.C(6) and Byron Unit 2 Operating License Condition 2.E was identified for the licensee's failure to obtain NRC approval before making changes to the fire protection program. Specifically, the licensee isolated the manual carbon dioxide (CO₂) suppression system to the upper cable spreading rooms (UCSR) without prior NRC approval. The licensee entered this issue in the corrective action program and implemented compensatory action to verify detection system operability.

The finding was determined to be more than minor because the inspectors could not reasonably determine that the isolation would not have ultimately required NRC prior approval. The inspectors determined this finding to be of very low safety significance (Green) based on a Phase 2 SDP evaluation. This finding is related to the cross-cutting area of Human Performance for failure to use conservative assumptions in decision making and to adopt a requirement that demonstrates the proposed action is safe in order to proceed with respect to reviewing the plant design and license basis. (H.1(b))

Inspection Report# : [2008004](#) (*pdf*)

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: FIN Finding

INADEQUATE PREVENTIVE MAINTENANCE FOR THE UNIT 2 TRAIN B STATION AIR COMPRESSOR

A finding of very low safety significance was self-revealed when the Unit 2 Train B (2B) station air compressor (SAC) tripped on two separate occasions due to inadequate preventive maintenance. The license entered this issue into the corrective action program and replaced the failed components and returned the SAC to service. This finding was determined not to be a violation of NRC requirements.

The finding is greater than minor because, if left uncorrected, the issue would have become a more significant safety concern. The inspectors completed a Phase 2 SDP evaluation using the Byron risk-informed inspection notebook and determined that this issue is of very low safety significance (Green) at 1E-7. The inspectors determined that this finding was related to the cross-cutting component of Human Performance for Resources (H.2.(a)) as the licensee did not minimize preventive maintenance deferrals to ensure that equipment were available and adequate to assure nuclear safety.

Inspection Report# : [2008004](#) (*pdf*)

Significance: N/A Mar 28, 2008

Identified By: NRC

Item Type: VIO Violation

Failure to Implement Timely Corrective Actions for Degraded SX Riser Piping

•White. The team identified an violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective action," associated with the licensee's failure to take timely corrective actions after identification of the corroded essential service water system riser pipes. Specifically, the licensee failed to take timely actions to remove the external corrosion layer present on the riser pipes to support sufficient wall thickness measurements to assess the significance of the pipe wall loss. Consequently, the licensee operated the plant for an extended period of time with a substantial loss of pipe wall on the essential service water riser piping while corrosion proceeded to the point that a through-wall leak developed on the 0C essential service water riser pipe.

The cause of this apparent violation was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to make conservative assumptions in decisions affecting the integrity of the essential service water riser piping. The presumption of pipe integrity was not based on sufficient information to be able to demonstrate that the proposed action/decision to leave these risers in service was safe. The licensee subsequently completed a plant shutdown and replaced the degraded portions of these essential service water system riser pipes.

The finding associated with this apparent violation was greater than minor because the degraded essential service water piping condition resulted in an increase in the likelihood of the loss of the essential service water system due to pipe failures, which directly affected the Initiating Events Cornerstone. It was also associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding associated with this apparent violation was assessed using a Phase 3 analysis in accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," and is preliminarily determined to have low to moderate safety significance (White). (Section 40A3.3)

Inspection Report# : [2007009](#) (pdf)

W

Significance: Mar 28, 2008

Identified By: NRC

Item Type: VIO Violation

Inadequate Design Margins for Continued Operation of SX Riser Pipes

•White. The team identified a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to verify the adequacy of the methodology and design inputs used to support licensee decisions to accept the degraded 0B, 0E and 0H essential service water system riser pipes for continued service. Specifically, the licensee failed to evaluate for compressive loads (e.g., buckling), use the applicable Code allowable stress, apply Code equations which account for thermal loads, and failed to correctly apply equations for checking the pipe functional capability. Consequently, the licensee failed to establish adequate design margins for continued service of the 0E, 0H and 0B essential service water system riser which resulted in extended plant operation with degraded SX riser pipes. The cause of this apparent violation was related to the Resources Component (Item H.2(a) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to maintain plant safety by maintenance of design margins. Specifically, these degraded riser pipes remained in-service without establishing adequate design margins in the engineering evaluations to justify continued service. The licensee subsequently completed a plant shutdown and replaced the degraded portions of these essential service water system riser pipes. The finding associated with this apparent violation was greater than minor because the degraded essential service water piping condition resulted in an increase in the likelihood of the loss of the essential service water system due to pipe failures, which directly affected the Initiating Events Cornerstone. It was also associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding associated with this apparent violation was assessed using a Phase 3 analysis in accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," and is preliminarily determined to have low to moderate safety significance (White). (Section 40A3.4)

Inspection Report# : [2007009](#) (pdf)

G

Significance: Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Unauthorized Transient Combustibles

The inspectors identified an NCV, having very low safety significance, of license condition 2.C(6) in that the licensee failed to implement and maintain in effect all provisions of the approved fire protection program. specifically, the inspectors identified that unauthorized transient combustibles were left adjacent to a cable riser in the auxiliary building contrary to implementing fire protection procedures.

Inspection Report# : [2008006](#) (pdf)

Mitigating Systems

G

Significance: Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

MISSED VENTING OF THE SAFETY INJECTION SYSTEM PIPING

A finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow the Adverse Condition Monitoring Plan for safety injection system check valve leakage. Specifically, the licensee failed to vent the safety injection line every three days as required by the plan. The licensee entered this issue in the corrective action program, immediately performed the required venting and incorporated the work into their daily schedule.

This finding is greater than minor because, if left uncorrected, the issue would have become a more significant safety concern. Since this finding is not a design or qualification deficiency, does not result in loss of system or train safety function and was not safety significance due to external events, this issue is screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross-cutting area for licensee's operation and engineering group to schedule and coordinate work activities as prescribed by the adverse condition monitoring plan to ensure the safety systems remained operable. (H.3(b))

Inspection Report# : [2008004](#) (pdf)

G

Significance: Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CORRECTLY TIGHTEN FITTINGS LEADS TO FAILURE TO START DURING A SURVEILLANCE OF THE 0B

SX AMKEUP PUMP

A finding of very low safety significance and associated NCV of Technical Specification (TS) 5.4, "Procedures," was self-revealed on May 27, 2008, when the 0B essential service water (SX) system makeup pump failed to start during a planned monthly surveillance test. The pump failed to start due to a lack of fuel prime. The licensee determined that on April 29, 2008, the check valve on the fuel oil supply line between the day tank and the engine had been replaced as part of a routine preventive maintenance program. The check valve was found in the installed condition with a loose fitting. The loose fitting had leaked slowly allowing fuel oil to drain from the primed fuel oil supply line. The issue has been entered into the licensee's CAP (IR 779699). The licensee's corrective actions included repairing the check valve and associated deficiencies, as well as revising the maintenance procedure.

The finding was considered more than minor because there was an actual loss of safety function of a single train for greater than its TS allowed outage time. The finding was determined to be of very low safety significance during a Phase 3 SDP. The primary cause of this finding was related to the cross-cutting area of Human Performance for Work Practices (H.4(c)) because licensee supervisory oversight of work activity failed to ensure procedural compliance. (Section 1R12.1.b)

Inspection Report# : [2008003](#) (pdf)

Significance: TBD Jun 30, 2008

Identified By: NRC

Item Type: AV Apparent Violation

FAILURE TO PERFORM AN UPDATED RISK EVALUATION PRIOR TO SURVEILLANCE TESTING OF THE UNIT 1 TRAIN A DIESEL GENERATOR BASED ON EXISTING PLANT CONDITIONS

AV. The licensee identified an apparent violation of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," (a)(4) for failure to perform an updated risk evaluation prior to surveillance testing of the Unit 1 Train A emergency diesel generator (EDG) based on existing plant conditions. This failure resulted in an inadvertent entry into an elevated online risk condition for Unit 2. This issue has potential safety significance greater than very low safety significance for Unit 2, which may change pending completion of the SDP. This issue was entered into their corrective action program as IR 759945. The licensee immediately implemented the compensatory measure of an operator stationed at the valve. They also took corrective actions to reassemble the valves and place them back in service.

The finding is more than minor in accordance with IMC 0612, Appendix E, Section 7, Example f, because the elevated overall plant risk when correctly accessed, is greater than 1.0E-6 Incremental Core Damage Probability (ICDP) and also put the plant into a higher risk category with additional risk management actions. The cause of this finding was related to the cross-cutting element of human performance for work control (H.3.(b)). (Section 1R13.1.b)

Inspection Report# : [2008003](#) (pdf)

G

Significance: Mar 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Operating Experience Procedure Not Followed for Service Water Corrosion Event

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to follow Procedure LS-AA-115, "Operating Experience Procedure," and implement corrective actions in response to an industry service water piping corrosion event which caused a service water system failure at a foreign reactor plant. Consequently, the licensee failed to implement actions to fix existing procedural controls so that a similar service water system corrosion and failure event would be precluded at the Byron Station. The cause of this finding was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee did not make conservative assumptions in decisions affecting the integrity of this SX piping. Specifically, the licensee's decision to not implement changes to station procedures and to not perform training for personnel on this service water operating experience event was not based on sufficient information to demonstrate that the decision was safe (e.g., would preclude a similar event from occurring at the Byron Station). The licensee entered this issue into the corrective action program.

This finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening" because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee's failure to implement corrective actions associated with the Byron programs for maintenance of the service water system adversely affects system reliability. The team evaluated the finding in accordance with IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered "No" to each of the screening questions, because the failure to incorporate corrective measures for this applicable operating experience event did not directly contribute to the delay in correcting the degraded SX riser pipe condition. Specifically, each of the degraded SX riser pipes had been identified and placed in the corrective action system by June of 2007, shortly after this operating experience evaluation was performed. Therefore, the finding screened as having very low safety significance. (Section 40A3.3)

Inspection Report# : [2007009](#) (pdf)

G

Significance: Mar 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

TRM Change Bypasses Procedure Change and Safety Evaluation Processes

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to ensure that Revision 54 of the Technical Requirements Manual was appropriate to the circumstances. Revision 54 of the Technical Requirements Manual was not appropriate to the circumstances, because it allowed deviations from the Technical Requirement Manual requirements without following the procedure change process and 10 CFR 50.59 review process. The cause of this finding was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to make conservative assumptions in decisions affecting the procedure adherence for safety related systems. Specifically, the licensee's assumptions for implementing Revision 54 were not based on a comprehensive review of system alignments for all possible Technical Requirements Manual deviations, and thus did not demonstrate that the proposed deviations allowed would be safe. The licensee subsequently removed the option to deviate from the Technical Requirements Manual and entered this issue into the corrective action program.

This finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Absent NRC intervention, the licensee's procedure option could have allowed unsafe deviations from the Technical Requirements Manual or allowed actions which would have required prior NRC approval (e.g., license amendment). The team evaluated the finding in accordance with IMC 0609.04 "Phase 1 – Initial Screening and Characterization of Findings." Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered "No" to each of the screening questions, because the NRC identified this deficient change prior to the licensee implementing any actions which adversely affected the structural integrity or operability of mitigating systems. Therefore, the finding screened as having very low safety significance. (Section 40A3.7)

Inspection Report# : [2007009](#) (*pdf*)



Significance: Mar 28, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify Corroded 0SX138B Valve Bolting During VT-2 Examination

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to identify severely corroded bolts (condition adverse to quality) on the 0B SX basin suction supply isolation valve 0SX138B. The cause of this finding was related to the Corrective Action Program Component (Item P.1(a) of IMC 305) for the cross-cutting area of Problem Identification and Resolution, because the licensee staff failed to adopt an appropriate threshold for identifying issues. Specifically, the failure of the licensee VT-2 examiner to identify these degraded bolts was related to an excessively high threshold for problem identification. The licensee entered this issue into the corrective action program and replaced the bolts on the lower half of this valve which were subjected to the most severe corrosion.

This finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening" because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Absent NRC intervention, the inappropriate threshold for identification of bolt corrosion as a condition adverse to quality would have gone uncorrected. This condition, if uncorrected, could lead to undetected corrosion failures in carbon steel components, affecting the reliability or capability of mitigating systems. The team evaluated the finding in accordance with IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered "No" to each of the screening questions, because the corrosion of the 0SX138B valve bolts had not yet challenged structural integrity or operability of the system. Therefore, the finding screened as having very low safety significance (Section 40A3.9).

Inspection Report# : [2007009](#) (*pdf*)

Significance: SL-IV Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform 10 CFR 50.59 Evaluations for Changes in Assumed Operator Times

The inspectors identified a Severity Level IV NCV, having very low safety significance, of 10 CFR 50.59 from the licensee's failure to provide a documented basis for determining that changes in how operator response times for postulated steam generator tube ruptures were credited in accident analyses did not require prior NRC approval.

Inspection Report# : [2008006](#) (*pdf*)



Significance: Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Actions for Motor Operated Valve Breaker Magnetic Trip Settings

The inspectors identified an NCV having very low safety significance of 10 CFR Part 50, Appendix B, Criterion XVI for the licensee's failure to take prompt corrective actions for a condition adverse to quality. specifically, when it was identified in 2003 that the magnetic trip setting for breakers associated with three essential service water MOVs was below calculated required values for motor reversal conditions, the

licensee failed to take interim corrective actions.

Inspection Report# : [2008006](#) (*pdf*)

G

Significance: Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

UNIT 0 TRAIN A ESSENTIAL SERVICE WATER BASIN LEVEL DROP

The inspectors identified a Non-Cited Violation (NCV) of 10 CFR 50.65(a)(4), for the licensee's failure to conduct an adequate risk assessment of the maintenance performed at the Unit 0 Train B essential service water basin. Specifically, the maintenance activities lowered the Unit 0 Train A Essential Service Water (SX) basin level and resulted in an unrecognized increase in the level of risk as determined by the licensee's shutdown safety management program. The primary cause of this finding was related to the cross-cutting area of human performance for failure to appropriately coordinate work activities between departments to assure plant and human performance. (H.3(b)) The finding was determined to be more than minor because the unplanned red risk condition was entered and the risk assessment had incorrect assumptions that had the potential to change the outcome of the assessment. The inspectors assessed the finding using Inspection Manual Chapter (IMC) 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," and determined the finding to be of very low safety significance (Green) because the safety function of the ultimate heat sink was not lost.

Inspection Report# : [2007005](#) (*pdf*)

Barrier Integrity

G

Significance: Mar 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

PLANT BARRIER IMPAIRMENT PERMIT NOT FOLLOWED

A finding of very low safety significance and associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee's failure to follow plant procedures. Plant maintenance workers left hoses running through a ventilation barrier door that caused the door to be open more than the allowed one inch. The licensee took immediate corrective actions which included closing the door and completing an evaluation which demonstrated operability of the door for ventilation purposes.

The finding was more than minor because, if left uncorrected, the issue would have become a more significant safety concern. The inspectors determined this finding represented a degradation of the radiological barrier function provided for the auxiliary building, therefore, the finding was considered to be of very low safety significance (Green). Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, Work Control - The licensee plans and coordinates work activities, consistent with nuclear safety

Inspection Report# : [2008002](#) (*pdf*)

Emergency Preparedness

G

Significance: Mar 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLOGICAL HAZARDS FOR ALPHA RADIATION

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 for failure to implement procedures required to evaluate radiological hazards for alpha contamination. The corrective actions taken by the licensee included notification of RP supervision to reject all surveys with beta/gamma contamination in excess of 100,000 dpm/100 cm² that do include alpha information. The issue was entered in the licensee's corrective action program as AR 755986.

The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that the failure to

fully evaluate the radiological hazards present in work areas could result in unplanned exposure to workers. The finding was determined to be of very low safety significance because it was not an As-Low-As-Is-Reasonably-Achievable (ALARA) planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding was caused by inadequate review and approval of survey data by RP Supervision. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Human Performance. Specifically, the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported.

Inspection Report# : [2008002](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Last modified : November 26, 2008

Byron 2

4Q/2008 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

ISOLATING CARBON DIOXIDE FIRE SUPPRESSION SYSTEM IN UPPER CABLE SPREADING ROOMS WITHOUT PRIOR NRC APPROVAL

A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Byron Unit 1 Operating License Condition 2.C(6) and Byron Unit 2 Operating License Condition 2.E was identified for the licensee's failure to obtain NRC approval before making changes to the fire protection program. Specifically, the licensee isolated the manual carbon dioxide (CO₂) suppression system to the upper cable spreading rooms (UCSR) without prior NRC approval. The licensee entered this issue in the corrective action program and implemented compensatory action to verify detection system operability.

The finding was determined to be more than minor because the inspectors could not reasonably determine that the isolation would not have ultimately required NRC prior approval. The inspectors determined this finding to be of very low safety significance (Green) based on a Phase 2 SDP evaluation. This finding is related to the cross-cutting area of Human Performance for failure to use conservative assumptions in decision making and to adopt a requirement that demonstrates the proposed action is safe in order to proceed with respect to reviewing the plant design and license basis. (H.1(b))

Inspection Report# : [2008004](#) (*pdf*)

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: FIN Finding

INADEQUATE PREVENTIVE MAINTENANCE FOR THE UNIT 2 TRAIN B STATION AIR COMPRESSOR

A finding of very low safety significance was self-revealed when the Unit 2 Train B (2B) station air compressor (SAC) tripped on two separate occasions due to inadequate preventive maintenance. The licensee entered this issue into the corrective action program and replaced the failed components and returned the SAC to service. This finding was determined not to be a violation of NRC requirements.

The finding is greater than minor because, if left uncorrected, the issue would have become a more significant safety concern. The inspectors completed a Phase 2 SDP evaluation using the Byron risk-informed inspection notebook and determined that this issue is of very low safety significance (Green) at 1E-7. The inspectors determined that this finding was related to the cross-cutting component of Human Performance for Resources (H.2.(a)) as the licensee did not minimize preventive maintenance deferrals to ensure that equipment were available and adequate to assure nuclear safety.

Inspection Report# : [2008004](#) (*pdf*)

Significance: N/A Feb 14, 2008

Identified By: NRC

Item Type: VIO Violation

Failure to Implement Timely Corrective Actions for Degraded SX Riser Piping

•White. The team identified an violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective action," associated with the licensee's failure to take timely corrective actions after identification of the corroded essential service water system riser pipes. Specifically, the licensee failed to take timely actions to remove the external corrosion layer present on the riser pipes to support sufficient wall thickness measurements to assess the significance of the pipe wall

loss. Consequently, the licensee operated the plant for an extended period of time with a substantial loss of pipe wall on the essential service water riser piping while corrosion proceeded to the point that a through-wall leak developed on the 0C essential service water riser pipe.

The cause of this apparent violation was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to make conservative assumptions in decisions affecting the integrity of the essential service water riser piping. The presumption of pipe integrity was not based on sufficient information to be able to demonstrate that the proposed action/decision to leave these risers in service was safe. The licensee subsequently completed a plant shutdown and replaced the degraded portions of these essential service water system riser pipes.

The finding associated with this apparent violation was greater than minor because the degraded essential service water piping condition resulted in an increase in the likelihood of the loss of the essential service water system due to pipe failures, which directly affected the Initiating Events Cornerstone. It was also associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding associated with this apparent violation was assessed using a Phase 3 analysis in accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," and is preliminarily determined to have low to moderate safety significance (White). (Section 4OA3.3)

Inspection Report# : [2009006](#) (*pdf*)

Inspection Report# : [2007009](#) (*pdf*)

Significance: **W** Feb 14, 2008

Identified By: NRC

Item Type: VIO Violation

Inadequate Design Margins for Continued Operation of SX Riser Pipes

•White. The team identified a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to verify the adequacy of the methodology and design inputs used to support licensee decisions to accept the degraded 0B, 0E and 0H essential service water system riser pipes for continued service. Specifically, the licensee failed to evaluate for compressive loads (e.g., buckling), use the applicable Code allowable stress, apply Code equations which account for thermal loads, and failed to correctly apply equations for checking the pipe functional capability. Consequently, the licensee failed to establish adequate design margins for continued service of the 0E, 0H and 0B essential service water system riser which resulted in extended plant operation with degraded SX riser pipes.

The cause of this apparent violation was related to the Resources Component (Item H.2(a) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to maintain plant safety by maintenance of design margins. Specifically, these degraded riser pipes remained in-service without establishing adequate design margins in the engineering evaluations to justify continued service. The licensee subsequently completed a plant shutdown and replaced the degraded portions of these essential service water system riser pipes.

The finding associated with this apparent violation was greater than minor because the degraded essential service water piping condition resulted in an increase in the likelihood of the loss of the essential service water system due to pipe failures, which directly affected the Initiating Events Cornerstone. It was also associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding associated with this apparent violation was assessed using a Phase 3 analysis in accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," and is preliminarily determined to have low to moderate safety significance (White). (Section 4OA3.4)

Inspection Report# : [2009006](#) (*pdf*)

Inspection Report# : [2007009](#) (*pdf*)

Significance: **G** Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Unauthorized Transient Combustibles

The inspectors identified an NCV, having very low safety significance, of license condition 2.C(6) in that the licensee failed to implement and maintain in effect all provisions of the approved fire protection program. specifically, the inspectors identified that unauthorized transient combustibles were left adjacent to a cable riser in the auxiliary building contrary to implementing fire protection procedures.

Inspection Report# : [2008006](#) (*pdf*)

Mitigating Systems

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REMOVE OR EVALUATE LOOSE DEBRIS INSIDE OF CONTAINMENT PRIOR TO APPLICABLE MODE

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow procedure BAP 1450-1, "Access to Containment." Specifically, the inspectors determined that the licensee failed to remove loose debris items from Unit 2 containment prior to Mode 4 or to perform an engineering evaluation. The issue was entered in the licensee's corrective action program as IR 867171.

The finding was more than minor because, if left uncorrected, the issue could have become a more significant safety concern. The inspectors evaluated the finding using IMC 0609, "SDP," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Finding," dated January 10, 2008, for the Mitigating Systems Cornerstone. Since this finding was not a design or qualification deficiency, did not result in loss of system or train safety function and was not safety significant due to external events, this issue was screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross cutting area for the licensee's failure to coordinate work activities and the need for work groups to coordinate with each other. The personnel who left the material in containment assumed it was acceptable as they had documented the material in a surveillance data sheet and the personnel who reviewed the completed data sheet assumed the material had been or would be removed from containment and none questioned the potential impact upon the recirculation sump screens or coordinated with each other to ensure resolution of the material prior to a Mode change. (H.3 (b))

Inspection Report# : [2008005](#) (*pdf*)

Significance: SL-IV Oct 10, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Update the Boron Recycle and RHR System Descriptions in the UFSAR

Severity Level IV. The inspectors identified a Severity Level IV Non-Cited Violation (NCV), having very low safety significance of 10 CFR 50.71, "Maintenance of Records, Making of Reports," for the licensee's failure to adequately update the Byron Station Updated Final Safety Analysis Report. Specifically, the description of: (1) the boron recycle system did not identify if the system was designed or capable of handling discharges from the safety injection and residual heat removal relief valves; (2) the residual heat removal system did not identify deviations from the system design standard with respect to the suction pipe relief valve single failure analysis and collection of relief valve discharges outside containment. The licensee entered this issue into the corrective action system.

Because this finding affected the NRC's ability to perform its regulatory function, this issue was evaluated using the traditional enforcement process. The finding was determined to be more than minor because the inspectors could not reasonably determine that a change to correct the Final Safety Analysis Report to reflect actual design would not have ultimately required NRC prior approval. The finding was determined to be of very low safety significance because the design deviations associated with the residual heat removal system and boron recycle system did not impact system operability. The inspectors determined that the finding did not have a cross-cutting aspect.

Inspection Report# : [2008009](#) (pdf)

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

MISSED VENTING OF THE SAFETY INJECTION SYSTEM PIPING

A finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow the Adverse Condition Monitoring Plan for safety injection system check valve leakage. Specifically, the licensee failed to vent the safety injection line every three days as required by the plan. The licensee entered this issue in the corrective action program, immediately performed the required venting and incorporated the work into their daily schedule.

This finding is greater than minor because, if left uncorrected, the issue would have become a more significant safety concern. Since this finding is not a design or qualification deficiency, does not result in loss of system or train safety function and was not safety significance due to external events, this issue is screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross-cutting area for licensee's operation and engineering group to schedule and coordinate work activities as prescribed by the adverse condition monitoring plan to ensure the safety systems remained operable. (H.3(b))

Inspection Report# : [2008004](#) (pdf)

Significance:  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CORRECTLY TIGHTEN FITTINGS LEADS TO FAILURE TO START DURING A SURVEILLANCE OF THE 0B SX AMKEUP PUMP

A finding of very low safety significance and associated NCV of Technical Specification (TS) 5.4, "Procedures," was self-revealed on May 27, 2008, when the 0B essential service water (SX) system makeup pump failed to start during a planned monthly surveillance test. The pump failed to start due to a lack of fuel prime. The licensee determined that on April 29, 2008, the check valve on the fuel oil supply line between the day tank and the engine had been replaced as part of a routine preventive maintenance program. The check valve was found in the installed condition with a loose fitting. The loose fitting had leaked slowly allowing fuel oil to drain from the primed fuel oil supply line. The issue has been entered into the licensee's CAP (IR 779699). The licensee's corrective actions included repairing the check valve and associated deficiencies, as well as revising the maintenance procedure.

The finding was considered more than minor because there was an actual loss of safety function of a single train for greater than its TS allowed outage time. The finding was determined to be of very low safety significance during a Phase 3 SDP. The primary cause of this finding was related to the cross-cutting area of Human Performance for Work Practices (H.4(c)) because licensee supervisory oversight of work activity failed to ensure procedural compliance. (Section 1R12.1.b)

Inspection Report# : [2008003](#) (pdf)

Significance:  Feb 14, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Operating Experience Procedure Not Followed for Service Water Corrosion Event

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to follow Procedure LS-AA-115, "Operating Experience Procedure," and implement corrective actions in response to an industry service water piping corrosion event which caused a service water system failure at a foreign reactor plant. Consequently, the licensee failed to implement actions to fix existing procedural controls so that a similar service water system corrosion and failure event would be precluded at the Byron Station. The cause of this finding was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee

did not make conservative assumptions in decisions affecting the integrity of this SX piping. Specifically, the licensee's decision to not implement changes to station procedures and to not perform training for personnel on this service water operating experience event was not based on sufficient information to demonstrate that the decision was safe (e.g., would preclude a similar event from occurring at the Byron Station). The licensee entered this issue into the corrective action program.

This finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening" because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee's failure to implement corrective actions associated with the Byron programs for maintenance of the service water system adversely affects system reliability. The team evaluated the finding in accordance with IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings." Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered "No" to each of the screening questions, because the failure to incorporate corrective measures for this applicable operating experience event did not directly contribute to the delay in correcting the degraded SX riser pipe condition. Specifically, each of the degraded SX riser pipes had been identified and placed in the corrective action system by June of 2007, shortly after this operating experience evaluation was performed. Therefore, the finding screened as having very low safety significance. (Section 40A3.3)

Inspection Report# : [2009006](#) (pdf)

Inspection Report# : [2007009](#) (pdf)

G

Significance: Feb 14, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

TRM Change Bypasses Procedure Change and Safety Evaluation Processes

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to ensure that Revision 54 of the Technical Requirements Manual was appropriate to the circumstances. Revision 54 of the Technical Requirements Manual was not appropriate to the circumstances, because it allowed deviations from the Technical Requirement Manual requirements without following the procedure change process and 10 CFR 50.59 review process. The cause of this finding was related to the Decision Making Component (Item H.1(b) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to make conservative assumptions in decisions affecting the procedure adherence for safety related systems. Specifically, the licensee's assumptions for implementing Revision 54 were not based on a comprehensive review of system alignments for all possible Technical Requirements Manual deviations, and thus did not demonstrate that the proposed deviations allowed would be safe. The licensee subsequently removed the option to deviate from the Technical Requirements Manual and entered this issue into the corrective action program.

This finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Absent NRC intervention, the licensee's procedure option could have allowed unsafe deviations from the Technical Requirements Manual or allowed actions which would have required prior NRC approval (e.g., license amendment). The team evaluated the finding in accordance with IMC 0609.04 "Phase 1 – Initial Screening and Characterization of Findings." Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered "No" to each of the screening questions, because the NRC identified this deficient change prior to the licensee implementing any actions which adversely affected the structural integrity or operability of mitigating systems. Therefore, the finding screened as having very low safety significance. (Section 40A3.7)

Inspection Report# : [2007009](#) (pdf)

G

Significance: Feb 14, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify Corroded 0SX138B Valve Bolting During VT-2 Examination

•Green. The team identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to identify severely corroded bolts (condition adverse to quality) on the 0B SX basin suction supply isolation valve 0SX138B. The cause of this finding was related to the Corrective Action Program Component (Item P.1(a) of IMC 305) for the cross-cutting area of Problem Identification and Resolution, because the licensee staff failed to adopt an appropriate threshold for identifying issues. Specifically, the failure of the licensee VT-2 examiner to identify these degraded bolts was related to an excessively high threshold for problem identification. The licensee entered this issue into the corrective action program and replaced the bolts on the lower half of this valve which were subjected to the most severe corrosion. This finding was determined to be more than minor in accordance with IMC 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening” because the finding was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Absent NRC intervention, the inappropriate threshold for identification of bolt corrosion as a condition adverse to quality would have gone uncorrected. This condition, if uncorrected, could lead to undetected corrosion failures in carbon steel components, affecting the reliability or capability of mitigating systems. The team evaluated the finding in accordance with IMC 0609.04, “Phase 1 – Initial Screening and Characterization of Findings.” Under the Mitigating Systems Cornerstone Column of Table 4a, the team answered “No” to each of the screening questions, because the corrosion of the 0SX138B valve bolts had not yet challenged structural integrity or operability of the system. Therefore, the finding screened as having very low safety significance (Section 40A3.9).

Inspection Report# : [2007009](#) (pdf)

Significance: SL-IV Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform 10 CFR 50.59 Evaluations for Changes in Assumed Operator Times

The inspectors identified a Severity Level IV NCV, having very low safety significance, of 10 CFR 50.59 from the licensee's failure to provide a documented basis for determining that changes in how operator response times for postulated steam generator tube ruptures were credited in accident analyses did not require prior NRC approval.

Inspection Report# : [2008006](#) (pdf)

Significance:  Jan 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Actions for Motor Operated Valve Breaker Magnetic Trip Settings

The inspectors identified an NCV having very low safety significance of 10 CFR Part 50, Appendix B, Criterion XVI for the licensee's failure to take prompt corrective actions for a condition adverse to quality. specifically, when it was identified in 2003 that the magnetic trip setting for breakers associated with three essential service water MOVs was below calculated required values for motor reversal conditions, the licensee failed to take interim corrective actions.

Inspection Report# : [2008006](#) (pdf)

Barrier Integrity

Significance:  Oct 10, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Analyze Inlet Piping Loads and Establish an Adequate HUT Quench Volume

Green. The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” having very low safety significance, associated with the licensee's failure to analyze and establish an adequate quench volume within the boron recycle system holdup tanks and failure to analyze the water hammer loads on boron recycle system holdup tank inlet piping induced by relief valve discharges. Insufficient holdup tank quench volume could result in an

overpressure failure of the holdup tank and the water hammer induced piping loads could damage the boron recycle system holdup tank inlet piping system. The licensee corrective actions included maintaining a minimum 40 percent boron recycle holdup tank level as a quench volume for system relief valves and initiated an action to perform an analysis to investigate the magnitude of the potential water hammer loads on the inlet piping.

The finding was more than minor because, the finding affects the Barrier Integrity Cornerstone objective for maintaining the Radiological Barrier Function of the Containment. The finding was associated with the design control and procedure quality attributes of the Barrier Integrity Cornerstone. The inspectors determined that the failure to establish an adequate boron recycle system holdup tank quench volume and analyze the magnitude of water hammer loads on boron recycle system holdup tank inlet piping degraded the Radiological Barrier Function of the Containment; but did not represent an actual open pathway from containment, therefore, the finding screened as having very low safety significance (Green). The inspectors determined that the finding did not have a cross-cutting aspect.

Inspection Report# : [2008009](#) (*pdf*)

Significance:  Mar 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

PLANT BARRIER IMPAIRMENT PERMIT NOT FOLLOWED

A finding of very low safety significance and associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee's failure to follow plant procedures. Plant maintenance workers left hoses running through a ventilation barrier door that caused the door to be open more than the allowed one inch. The licensee took immediate corrective actions which included closing the door and completing an evaluation which demonstrated operability of the door for ventilation purposes.

The finding was more than minor because, if left uncorrected, the issue would have become a more significant safety concern. The inspectors determined this finding represented a degradation of the radiological barrier function provided for the auxiliary building, therefore, the finding was considered to be of very low safety significance (Green). Additionally, the inspectors determined that the finding had a cross-cutting aspect in the area of human performance. Specifically, Work Control - The licensee plans and coordinates work activities, consistent with nuclear safety

Inspection Report# : [2008002](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLIGICAL HAZARDS FOR AIRBORNE RADIOACTIVITY

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification (TS) 5.4.1 for failure to implement procedures required to evaluate radiological hazards for airborne radioactivity. Specifically, the inspectors identified that the licensee failed to re-start an air sampler on the refuel floor which supplied the only air monitoring while workers were performing activities in the area. The corrective actions taken by the licensee included starting the required air sampler. The issue was entered in the licensee's corrective action program as IR 828767.

The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation

Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that the failure to fully evaluate the radiological hazards present in work areas could result in unplanned exposure to workers. The finding was determined to be of very low safety significance because it was not an As-Low-As-Is-Reasonably-Achievable (ALARA) planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding was caused by inadequate self checking and peer checking. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Human Performance. Specifically, the licensee failed to utilize human error prevention techniques commensurate with the risk of the task. H.4(a)

Inspection Report# : [2008005](#) (*pdf*)

Significance:  Mar 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLOGICAL HAZARDS FOR ALPHA RADIATION

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 for failure to implement procedures required to evaluate radiological hazards for alpha contamination. The corrective actions taken by the licensee included notification of RP supervision to reject all surveys with beta/gamma contamination in excess of 100,000 dpm/100 cm² that do include alpha information. The issue was entered in the licensee's corrective action program as AR 755986.

The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that the failure to fully evaluate the radiological hazards present in work areas could result in unplanned exposure to workers. The finding was determined to be of very low safety significance because it was not an As-Low-As-Is-Reasonably-Achievable (ALARA) planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding was caused by inadequate review and approval of survey data by RP Supervision. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Human Performance. Specifically, the licensee failed to ensure supervisory and management oversight of work activities, including contractors, such that nuclear safety is supported.

Inspection Report# : [2008002](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Last modified : April 07, 2009

Byron 2

1Q/2009 Plant Inspection Findings

Initiating Events

Significance: **G** Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

ISOLATING CARBON DIOXIDE FIRE SUPPRESSION SYSTEM IN UPPER CABLE SPREADING ROOMS WITHOUT PRIOR NRC APPROVAL

A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Byron Unit 1 Operating License Condition 2.C(6) and Byron Unit 2 Operating License Condition 2.E was identified for the licensee's failure to obtain NRC approval before making changes to the fire protection program. Specifically, the licensee isolated the manual carbon dioxide (CO₂) suppression system to the upper cable spreading rooms (UCSR) without prior NRC approval. The licensee entered this issue in the corrective action program and implemented compensatory action to verify detection system operability.

The finding was determined to be more than minor because the inspectors could not reasonably determine that the isolation would not have ultimately required NRC prior approval. The inspectors determined this finding to be of very low safety significance (Green) based on a Phase 2 SDP evaluation. This finding is related to the cross-cutting area of Human Performance for failure to use conservative assumptions in decision making and to adopt a requirement that demonstrates the proposed action is safe in order to proceed with respect to reviewing the plant design and license basis. (H.1(b))

Inspection Report# : [2008004](#) (*pdf*)

Significance: **G** Sep 30, 2008

Identified By: NRC

Item Type: FIN Finding

INADEQUATE PREVENTIVE MAINTENANCE FOR THE UNIT 2 TRAIN B STATION AIR COMPRESSOR

A finding of very low safety significance was self-revealed when the Unit 2 Train B (2B) station air compressor (SAC) tripped on two separate occasions due to inadequate preventive maintenance. The licensee entered this issue into the corrective action program and replaced the failed components and returned the SAC to service. This finding was determined not to be a violation of NRC requirements.

The finding is greater than minor because, if left uncorrected, the issue would have become a more significant safety concern. The inspectors completed a Phase 2 SDP evaluation using the Byron risk-informed inspection notebook and determined that this issue is of very low safety significance (Green) at 1E-7. The inspectors determined that this finding was related to the cross-cutting component of Human Performance for Resources (H.2.(a)) as the licensee did not minimize preventive maintenance deferrals to ensure that equipment were available and adequate to assure nuclear safety.

Inspection Report# : [2008004](#) (*pdf*)

Significance: **W** Feb 14, 2008

Identified By: NRC

Item Type: VIO Violation

Inadequate Design Margins for Continued Operation of SX Riser Pipes

•White. The team identified a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," associated with the licensee's failure to verify the adequacy of the methodology and design inputs used to support licensee decisions to accept the degraded 0B, 0E and 0H essential service water system riser pipes for continued service.

Specifically, the licensee failed to evaluate for compressive loads (e.g., buckling), use the applicable Code allowable stress, apply Code equations which account for thermal loads, and failed to correctly apply equations for checking the pipe functional capability. Consequently, the licensee failed to establish adequate design margins for continued service of the 0E, 0H and 0B essential service water system riser which resulted in extended plant operation with degraded SX riser pipes.

The cause of this apparent violation was related to the Resources Component (Item H.2(a) of IMC 305) for the cross-cutting area of Human Performance, because the licensee failed to maintain plant safety by maintenance of design margins. Specifically, these degraded riser pipes remained in-service without establishing adequate design margins in the engineering evaluations to justify continued service. The licensee subsequently completed a plant shutdown and replaced the degraded portions of these essential service water system riser pipes.

The finding associated with this apparent violation was greater than minor because the degraded essential service water piping condition resulted in an increase in the likelihood of the loss of the essential service water system due to pipe failures, which directly affected the Initiating Events Cornerstone. It was also associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding associated with this apparent violation was assessed using a Phase 3 analysis in accordance with NRC Inspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," and is preliminarily determined to have low to moderate safety significance (White). (Section 4OA3.4)

Inspection Report# : [2007009](#) (*pdf*)

Inspection Report# : [2009006](#) (*pdf*)

Mitigating Systems

Significance:  Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM AN ADEQUATE RISK ASSESSMENT THAT ACCOUNTED FOR ALL RISK SIGNIFICANT STRUCTURES, SYSTEMS AND COMPONENTS THAT WERE UNAVAILABLE PRIOR TO MAINTENANCE ACTIVITIES.

A finding of very low safety significance and associated NCV of 10 CFR 50.65(a)(4) was identified by the inspectors for the licensee's failure to perform a risk assessment that accounted for the inability of the Unit 1 Essential Service Water suction valve 1SX001A to close before performing maintenance. The finding was more than minor because it was similar to NRC IMC 0612, Appendix E, "Examples of Minor Issues," Example 7e, in that the elevated overall plant risk, when correctly assessed, would have required additional risk management actions. This finding had the potential to become a more significant event if the suction valve was required to mitigate flooding in the auxiliary building.

The finding was determined to be of very low safety significance since the Incremental Core Damage Frequency (ICDP) was calculated to be $9.44E-7$ given that the condition existed for 14 days. The primary cause of this finding was related to the cross-cutting area of Human Performance for Resources (H.2(c)) because Valve 1SX001A was not added to the Paragon risk assessment computer program to allow the user to make effective risk assessments. The licensee entered this issue into their correction action program as IR 889131 and performed a risk assessment for the condition.

Inspection Report# : [2009002](#) (*pdf*)

Significance:  Mar 27, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain/Extend the Qualification Basis for Molded-Case Circuit Breakers (MCCBs) Used in Safety Related Applications Greater than 20 Years.

Green. A finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to maintain the qualification bases for safety-related equipment. Specifically, the licensee failed to maintain/extend the qualified life of the Westinghouse molded case circuit breakers (MCCBs) after the manufacturer's qualifications ended at 20 years as required by 10 CFR Part 50, Appendix A and B. As a result, the licensee issued a condition report and performed an engineering evaluation, which supported continuing qualification of the MCCBs and an operability evaluation, which found the MCCBs operable.

The inspectors determined that the finding was more than minor because not maintaining qualified components in safety-related systems structures and components (SSCs) could lead to the inability to respond to design basis events. The finding screened as of very low safety significance because the finding was a design or qualification deficiency confirmed not to result in loss of operability or functionality. The inspectors identified a cross-cutting aspect associated with this finding in the area of problem identification and resolution because the licensee did not effectively incorporate pertinent manufacturer's operating experience into maintaining the qualification of the MCCBs. (P.2.(b))

Inspection Report# : [2009007](#) (pdf)

Significance:  Mar 27, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Analysis of Molded-Case Circuit Breaker Test Data.

•Green. A finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified by the inspectors for the failure to identify, and take corrective action to address adverse mold case circuit breaker (MCCBs) test results. Specifically, the licensee failed to recognize an excessive test failure rate, assess the impact on the installed MCCBs, promptly replace all failed MCCBs, and evaluate the past and current operability of the attached loads. As a result, the licensee issued a condition report and an operability evaluation, which found the MCCBs operable.

The inspectors determined that the finding was more than minor because not ensuring the function and operability of all required MCCBs supplying safety-related SSCs could lead to the inability to respond to design basis events. The finding screened as very low safety significance because it would not result in the total loss of a safety function. Specifically, the licensee evaluation showed that there was no loss of breaker coordination. 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 in decision-making. (H1.b)

Inspection Report# : [2009007](#) (pdf)

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REMOVE OR EVALUATE LOOSE DEBRIS INSIDE OF CONTAINMENT PRIOR TO APPLICABLE MODE

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow procedure BAP 1450-1, "Access to Containment." Specifically, the inspectors determined that the licensee failed to remove loose debris items from Unit 2 containment prior to Mode 4 or to perform an engineering evaluation. The issue was entered in the licensee's corrective action program as IR 867171.

The finding was more than minor because, if left uncorrected, the issue could have become a more significant safety concern. The inspectors evaluated the finding using IMC 0609, "SDP," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Finding," dated January 10, 2008, for the Mitigating Systems Cornerstone. Since this finding was not a design or qualification deficiency, did not result in loss of system or train safety function and was not safety significant due to external events, this issue was screened as very low safety significance. This finding

is related to the Work Control component of the Human Performance cross cutting area for the licensee's failure to coordinate work activities and the need for work groups to coordinate with each other. The personnel who left the material in containment assumed it was acceptable as they had documented the material in a surveillance data sheet and the personnel who reviewed the completed data sheet assumed the material had been or would be removed from containment and none questioned the potential impact upon the recirculation sump screens or coordinated with each other to ensure resolution of the material prior to a Mode change. (H.3 (b))

Inspection Report# : [2008005](#) (pdf)

Significance: SL-IV Oct 10, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Update the Boron Recycle and RHR System Descriptions in the UFSAR

Severity Level IV. The inspectors identified a Severity Level IV Non-Cited Violation (NCV), having very low safety significance of 10 CFR 50.71, "Maintenance of Records, Making of Reports," for the licensee's failure to adequately update the Byron Station Updated Final Safety Analysis Report. Specifically, the description of: (1) the boron recycle system did not identify if the system was designed or capable of handling discharges from the safety injection and residual heat removal relief valves; (2) the residual heat removal system did not identify deviations from the system design standard with respect to the suction pipe relief valve single failure analysis and collection of relief valve discharges outside containment. The licensee entered this issue into the corrective action system.

Because this finding affected the NRC's ability to perform its regulatory function, this issue was evaluated using the traditional enforcement process. The finding was determined to be more than minor because the inspectors could not reasonably determine that a change to correct the Final Safety Analysis Report to reflect actual design would not have ultimately required NRC prior approval. The finding was determined to be of very low safety significance because the design deviations associated with the residual heat removal system and boron recycle system did not impact system operability. The inspectors determined that the finding did not have a cross-cutting aspect.

Inspection Report# : [2008009](#) (pdf)

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

MISSED VENTING OF THE SAFETY INJECTION SYSTEM PIPING

A finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow the Adverse Condition Monitoring Plan for safety injection system check valve leakage. Specifically, the licensee failed to vent the safety injection line every three days as required by the plan. The licensee entered this issue in the corrective action program, immediately performed the required venting and incorporated the work into their daily schedule.

This finding is greater than minor because, if left uncorrected, the issue would have become a more significant safety concern. Since this finding is not a design or qualification deficiency, does not result in loss of system or train safety function and was not safety significance due to external events, this issue is screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross-cutting area for licensee's operation and engineering group to schedule and coordinate work activities as prescribed by the adverse condition monitoring plan to ensure the safety systems remained operable. (H.3(b))

Inspection Report# : [2008004](#) (pdf)

Significance:  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CORRECTLY TIGHTEN FITTINGS LEADS TO FAILURE TO START DURING A SURVEILLANCE OF THE 0B SX AMKEUP PUMP

A finding of very low safety significance and associated NCV of Technical Specification (TS) 5.4, "Procedures," was self-revealed on May 27, 2008, when the 0B essential service water (SX) system makeup pump failed to start during a

planned monthly surveillance test. The pump failed to start due to a lack of fuel prime. The licensee determined that on April 29, 2008, the check valve on the fuel oil supply line between the day tank and the engine had been replaced as part of a routine preventive maintenance program. The check valve was found in the installed condition with a loose fitting. The loose fitting had leaked slowly allowing fuel oil to drain from the primed fuel oil supply line. The issue has been entered into the licensee's CAP (IR 779699). The licensee's corrective actions included repairing the check valve and associated deficiencies, as well as revising the maintenance procedure.

The finding was considered more than minor because there was an actual loss of safety function of a single train for greater than its TS allowed outage time. The finding was determined to be of very low safety significance during a Phase 3 SDP. The primary cause of this finding was related to the cross-cutting area of Human Performance for Work Practices (H.4(c)) because licensee supervisory oversight of work activity failed to ensure procedural compliance. (Section 1R12.1.b)

Inspection Report# : [2008003](#) (*pdf*)

Barrier Integrity

Significance:  Oct 10, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Analyze Inlet Piping Loads and Establish an Adequate HUT Quench Volume

Green. The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance, associated with the licensee's failure to analyze and establish an adequate quench volume within the boron recycle system holdup tanks and failure to analyze the water hammer loads on boron recycle system holdup tank inlet piping induced by relief valve discharges. Insufficient holdup tank quench volume could result in an overpressure failure of the holdup tank and the water hammer induced piping loads could damage the boron recycle system holdup tank inlet piping system. The licensee corrective actions included maintaining a minimum 40 percent boron recycle holdup tank level as a quench volume for system relief valves and initiated an action to perform an analysis to investigate the magnitude of the potential water hammer loads on the inlet piping.

The finding was more than minor because, the finding affects the Barrier Integrity Cornerstone objective for maintaining the Radiological Barrier Function of the Containment. The finding was associated with the design control and procedure quality attributes of the Barrier Integrity Cornerstone. The inspectors determined that the failure to establish an adequate boron recycle system holdup tank quench volume and analyze the magnitude of water hammer loads on boron recycle system holdup tank inlet piping degraded the Radiological Barrier Function of the Containment; but did not represent an actual open pathway from containment, therefore, the finding screened as having very low safety significance (Green). The inspectors determined that the finding did not have a cross-cutting aspect.

Inspection Report# : [2008009](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLIGICAL HAZARDS FOR AIRBORNE RADIOACTIVITY

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification (TS) 5.4.1 for failure to implement procedures required to evaluate radiological hazards for airborne radioactivity. Specifically, the inspectors identified that the licensee failed to re-start an air sampler on the refuel floor which supplied the only air monitoring while workers were performing activities in the area. The corrective actions taken by the licensee included starting the required air sampler. The issue was entered in the licensee's corrective action program as IR 828767.

The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that the failure to fully evaluate the radiological hazards present in work areas could result in unplanned exposure to workers. The finding was determined to be of very low safety significance because it was not an As-Low-As-Is-Reasonably-Achievable (ALARA) planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding was caused by inadequate self checking and peer checking. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Human Performance. Specifically, the licensee failed to utilize human error prevention techniques commensurate with the risk of the task. H.4(a)

Inspection Report# : [2008005](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Last modified : May 28, 2009

Byron 2

2Q/2009 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

ISOLATING CARBON DIOXIDE FIRE SUPPRESSION SYSTEM IN UPPER CABLE SPREADING ROOMS WITHOUT PRIOR NRC APPROVAL

A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Byron Unit 1 Operating License Condition 2.C(6) and Byron Unit 2 Operating License Condition 2.E was identified for the licensee's failure to obtain NRC approval before making changes to the fire protection program. Specifically, the licensee isolated the manual carbon dioxide (CO₂) suppression system to the upper cable spreading rooms (UCSR) without prior NRC approval. The licensee entered this issue in the corrective action program and implemented compensatory action to verify detection system operability.

The finding was determined to be more than minor because the inspectors could not reasonably determine that the isolation would not have ultimately required NRC prior approval. The inspectors determined this finding to be of very low safety significance (Green) based on a Phase 2 SDP evaluation. This finding is related to the cross-cutting area of Human Performance for failure to use conservative assumptions in decision making and to adopt a requirement that demonstrates the proposed action is safe in order to proceed with respect to reviewing the plant design and license basis. (H.1(b))

Inspection Report# : [2008004](#) (*pdf*)

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: FIN Finding

INADEQUATE PREVENTIVE MAINTENANCE FOR THE UNIT 2 TRAIN B STATION AIR COMPRESSOR

A finding of very low safety significance was self-revealed when the Unit 2 Train B (2B) station air compressor (SAC) tripped on two separate occasions due to inadequate preventive maintenance. The licensee entered this issue into the corrective action program and replaced the failed components and returned the SAC to service. This finding was determined not to be a violation of NRC requirements.

The finding is greater than minor because, if left uncorrected, the issue would have become a more significant safety concern. The inspectors completed a Phase 2 SDP evaluation using the Byron risk-informed inspection notebook and determined that this issue is of very low safety significance (Green) at 1E-7. The inspectors determined that this finding was related to the cross-cutting component of Human Performance for Resources (H.2.(a)) as the licensee did not minimize preventive maintenance deferrals to ensure that equipment were available and adequate to assure nuclear safety.

Inspection Report# : [2008004](#) (*pdf*)

Mitigating Systems

Significance:  Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM AN ADEQUATE RISK ASSESSMENT THAT ACCOUNTED FOR ALL RISK SIGNIFICANT STRUCTURES, SYSTEMS AND COMPONENTS THAT WERE UNAVAILABLE PRIOR TO MAINTENANCE ACTIVITIES.

A finding of very low safety significance and associated NCV of 10 CFR 50.65(a)(4) was identified by the inspectors for the licensee's failure to perform a risk assessment that accounted for the inability of the Unit 1 Essential Service Water suction valve 1SX001A to close before performing maintenance. The finding was more than minor because it was similar to NRC IMC 0612, Appendix E, "Examples of Minor Issues," Example 7e, in that the elevated overall plant risk, when correctly assessed, would have required additional risk management actions. This finding had the potential to become a more significant event if the suction valve was required to mitigate flooding in the auxiliary building.

The finding was determined to be of very low safety significance since the Incremental Core Damage Frequency (ICDP) was calculated to be $9.44E-7$ given that the condition existed for 14 days. The primary cause of this finding was related to the cross-cutting area of Human Performance for Resources (H.2(c)) because Valve 1SX001A was not added to the Paragon risk assessment computer program to allow the user to make effective risk assessments. The licensee entered this issue into their correction action program as IR 889131 and performed a risk assessment for the condition.

Inspection Report# : [2009002](#) (pdf)

Significance:  Mar 27, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain/Extend the Qualification Basis for Molded-Case Circuit Breakers (MCCBs) Used in Safety Related Applications Greater than 20 Years.

Green. A finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to maintain the qualification bases for safety-related equipment. Specifically, the licensee failed to maintain/extend the qualified life of the Westinghouse molded case circuit breakers (MCCBs) after the manufacturer's qualifications ended at 20 years as required by 10 CFR Part 50, Appendix A and B. As a result, the licensee issued a condition report and performed an engineering evaluation, which supported continuing qualification of the MCCBs and an operability evaluation, which found the MCCBs operable.

The inspectors determined that the finding was more than minor because not maintaining qualified components in safety-related systems structures and components (SSCs) could lead to the inability to respond to design basis events. The finding screened as of very low safety significance because the finding was a design or qualification deficiency confirmed not to result in loss of operability or functionality. The inspectors identified a cross-cutting aspect associated with this finding in the area of problem identification and resolution because the licensee did not effectively incorporate pertinent manufacturer's operating experience into maintaining the qualification of the MCCBs. (P.2.(b))

Inspection Report# : [2009007](#) (pdf)

Significance:  Mar 27, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Analysis of Molded-Case Circuit Breaker Test Data.

•Green. A finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified by the inspectors for the failure to identify, and take corrective action to address adverse mold case circuit breaker (MCCBs) test results. Specifically, the licensee failed to recognize an excessive test failure rate, assess the impact on the installed MCCBs, promptly replace all failed MCCBs, and evaluate the past and current operability of the attached loads. As a result, the licensee issued a condition report and an operability evaluation, which found the MCCBs operable.

The inspectors determined that the finding was more than minor because not ensuring the function and operability of all required MCCBs supplying safety-related SSCs could lead to the inability to respond to design basis events. The finding screened as very low safety significance because it would not result in the total loss of a safety function. Specifically, the licensee evaluation showed that there was no loss of breaker coordination. 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 in decision-making. (H1.b)

Inspection Report# : [2009007](#) (pdf)

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REMOVE OR EVALUATE LOOSE DEBRIS INSIDE OF CONTAINMENT PRIOR TO APPLICABLE MODE

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow procedure BAP 1450-1, "Access to Containment." Specifically, the inspectors determined that the licensee failed to remove loose debris items from Unit 2 containment prior to Mode 4 or to perform an engineering evaluation. The issue was entered in the licensee's corrective action program as IR 867171.

The finding was more than minor because, if left uncorrected, the issue could have become a more significant safety concern. The inspectors evaluated the finding using IMC 0609, "SDP," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Finding," dated January 10, 2008, for the Mitigating Systems Cornerstone. Since this finding was not a design or qualification deficiency, did not result in loss of system or train safety function and was not safety significant due to external events, this issue was screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross cutting area for the licensee's failure to coordinate work activities and the need for work groups to coordinate with each other. The personnel who left the material in containment assumed it was acceptable as they had documented the material in a surveillance data sheet and the personnel who reviewed the completed data sheet assumed the material had been or would be removed from containment and none questioned the potential impact upon the recirculation sump screens or coordinated with each other to ensure resolution of the material prior to a Mode change. (H.3 (b))

Inspection Report# : [2008005](#) (pdf)

Significance: SL-IV Oct 10, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Update the Boron Recycle and RHR System Descriptions in the UFSAR

Severity Level IV. The inspectors identified a Severity Level IV Non-Cited Violation (NCV), having very low safety significance of 10 CFR 50.71, "Maintenance of Records, Making of Reports," for the licensee's failure to adequately update the Byron Station Updated Final Safety Analysis Report. Specifically, the description of: (1) the boron recycle system did not identify if the system was designed or capable of handling discharges from the safety injection and residual heat removal relief valves; (2) the residual heat removal system did not identify deviations from the system design standard with respect to the suction pipe relief valve single failure analysis and collection of relief valve discharges outside containment. The licensee entered this issue into the corrective action system.

Because this finding affected the NRC's ability to perform its regulatory function, this issue was evaluated using the traditional enforcement process. The finding was determined to be more than minor because the inspectors could not reasonably determine that a change to correct the Final Safety Analysis Report to reflect actual design would not have ultimately required NRC prior approval. The finding was determined to be of very low safety significance because the design deviations associated with the residual heat removal system and boron recycle system did not impact system operability. The inspectors determined that the finding did not have a cross-cutting aspect.

Inspection Report# : [2008009](#) (pdf)

Significance: **G** Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

MISSED VENTING OF THE SAFETY INJECTION SYSTEM PIPING

A finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow the Adverse Condition Monitoring Plan for safety injection system check valve leakage. Specifically, the licensee failed to vent the safety injection line every three days as required by the plan. The licensee entered this issue in the corrective action program, immediately performed the required venting and incorporated the work into their daily schedule.

This finding is greater than minor because, if left uncorrected, the issue would have become a more significant safety concern. Since this finding is not a design or qualification deficiency, does not result in loss of system or train safety function and was not safety significance due to external events, this issue is screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross-cutting area for licensee's operation and engineering group to schedule and coordinate work activities as prescribed by the adverse condition monitoring plan to ensure the safety systems remained operable. (H.3(b))

Inspection Report# : [2008004](#) (*pdf*)

Barrier Integrity

Significance: **G** Oct 10, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Analyze Inlet Piping Loads and Establish an Adequate HUT Quench Volume

Green. The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance, associated with the licensee's failure to analyze and establish an adequate quench volume within the boron recycle system holdup tanks and failure to analyze the water hammer loads on boron recycle system holdup tank inlet piping induced by relief valve discharges. Insufficient holdup tank quench volume could result in an overpressure failure of the holdup tank and the water hammer induced piping loads could damage the boron recycle system holdup tank inlet piping system. The licensee corrective actions included maintaining a minimum 40 percent boron recycle holdup tank level as a quench volume for system relief valves and initiated an action to perform an analysis to investigate the magnitude of the potential water hammer loads on the inlet piping.

The finding was more than minor because, the finding affects the Barrier Integrity Cornerstone objective for maintaining the Radiological Barrier Function of the Containment. The finding was associated with the design control and procedure quality attributes of the Barrier Integrity Cornerstone. The inspectors determined that the failure to establish an adequate boron recycle system holdup tank quench volume and analyze the magnitude of water hammer loads on boron recycle system holdup tank inlet piping degraded the Radiological Barrier Function of the Containment; but did not represent an actual open pathway from containment, therefore, the finding screened as having very low safety significance (Green). The inspectors determined that the finding did not have a cross-cutting aspect.

Inspection Report# : [2008009](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

G**Significance:** Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLIGICAL HAZARDS FOR AIRBORNE RADIOACTIVITY

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification (TS) 5.4.1 for failure to implement procedures required to evaluate radiological hazards for airborne radioactivity. Specifically, the inspectors identified that the licensee failed to re-start an air sampler on the refuel floor which supplied the only air monitoring while workers were performing activities in the area. The corrective actions taken by the licensee included starting the required air sampler. The issue was entered in the licensee's corrective action program as IR 828767.

The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that the failure to fully evaluate the radiological hazards present in work areas could result in unplanned exposure to workers. The finding was determined to be of very low safety significance because it was not an As-Low-As-Is-Reasonably-Achievable (ALARA) planning issue, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding was caused by inadequate self checking and peer checking. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Human Performance. Specifically, the licensee failed to utilize human error prevention techniques commensurate with the risk of the task. H.4(a)

Inspection Report# : [2008005](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Last modified : August 31, 2009

Byron 2

3Q/2009 Plant Inspection Findings

Initiating Events

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*)

Mitigating Systems

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 \(pdf\)](#)

Significance:  Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM AN ADEQUATE RISK ASSESSMENT THAT ACCOUNTED FOR ALL RISK SIGNIFICANT STRUCTURES, SYSTEMS AND COMPONENTS THAT WERE UNAVAILABLE PRIOR TO MAINTENANCE ACTIVITIES.

A finding of very low safety significance and associated NCV of 10 CFR 50.65(a)(4) was identified by the inspectors for the licensee's failure to perform a risk assessment that accounted for the inability of the Unit 1 Essential Service Water suction valve 1SX001A to close before performing maintenance. The finding was more than minor because it was similar to NRC IMC 0612, Appendix E, "Examples of Minor Issues," Example 7e, in that the elevated overall plant risk, when correctly assessed, would have required additional risk management actions. This finding had the potential to become a more significant event if the suction valve was required to mitigate flooding in the auxiliary building.

The finding was determined to be of very low safety significance since the Incremental Core Damage Frequency (ICDP) was calculated to be $9.44E-7$ given that the condition existed for 14 days. The primary cause of this finding was related to the cross-cutting area of Human Performance for Resources (H.2(c)) because Valve 1SX001A was not added to the Paragon risk assessment computer program to allow the user to make effective risk assessments. The licensee entered this issue into their correction action program as IR 889131 and performed a risk assessment for the condition.

Inspection Report# : [2009002 \(pdf\)](#)

Significance:  Mar 27, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain/Extend the Qualification Basis for Molded-Case Circuit Breakers (MCCBs) Used in Safety Related Applications Greater than 20 Years.

Green. A finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to maintain the qualification bases for safety-related equipment. Specifically, the licensee failed to maintain/extend the qualified life of the Westinghouse molded case circuit breakers (MCCBs) after the manufacturer's qualifications ended at 20 years as required by 10 CFR Part 50, Appendix A and B. As a result, the licensee issued a condition report and performed an engineering evaluation, which supported continuing qualification of the MCCBs and an operability evaluation, which found the MCCBs operable.

The inspectors determined that the finding was more than minor because not maintaining qualified components in safety-related systems structures and components (SSCs) could lead to the inability to respond to design basis events. The finding screened as of very low safety significance because the finding was a design or qualification deficiency confirmed not to result in loss of operability or functionality. The inspectors identified a cross-cutting aspect associated with this finding in the area of problem identification and resolution because the licensee did not effectively incorporate pertinent manufacturer's operating experience into maintaining the qualification of the MCCBs. (P.2.(b))

Inspection Report# : [2009007 \(pdf\)](#)

Significance:  Mar 27, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Analysis of Molded-Case Circuit Breaker Test Data.

•Green. A finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified by the inspectors for the failure to identify, and take corrective

action to address adverse mold case circuit breaker (MCCBs) test results. Specifically, the licensee failed to recognize an excessive test failure rate, assess the impact on the installed MCCBs, promptly replace all failed MCCBs, and evaluate the past and current operability of the attached loads. As a result, the licensee issued a condition report and an operability evaluation, which found the MCCBs operable.

The inspectors determined that the finding was more than minor because not ensuring the function and operability of all required MCCBs supplying safety-related SSCs could lead to the inability to respond to design basis events. The finding screened as very low safety significance because it would not result in the total loss of a safety function. Specifically, the licensee evaluation showed that there was no loss of breaker coordination. 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 in decision-making. (H1.b)

Inspection Report# : [2009007](#) (*pdf*)

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REMOVE OR EVALUATE LOOSE DEBRIS INSIDE OF CONTAINMENT PRIOR TO APPLICABLE MODE

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow procedure BAP 1450-1, "Access to Containment." Specifically, the inspectors determined that the licensee failed to remove loose debris items from Unit 2 containment prior to Mode 4 or to perform an engineering evaluation. The issue was entered in the licensee's corrective action program as IR 867171.

The finding was more than minor because, if left uncorrected, the issue could have become a more significant safety concern. The inspectors evaluated the finding using IMC 0609, "SDP," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Finding," dated January 10, 2008, for the Mitigating Systems Cornerstone. Since this finding was not a design or qualification deficiency, did not result in loss of system or train safety function and was not safety significant due to external events, this issue was screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross cutting area for the licensee's failure to coordinate work activities and the need for work groups to coordinate with each other. The personnel who left the material in containment assumed it was acceptable as they had documented the material in a surveillance data sheet and the personnel who reviewed the completed data sheet assumed the material had been or would be removed from containment and none questioned the potential impact upon the recirculation sump screens or coordinated with each other to ensure resolution of the material prior to a Mode change. (H.3 (b))

Inspection Report# : [2008005](#) (*pdf*)

Significance: SL-IV Oct 10, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Update the Boron Recycle and RHR System Descriptions in the UFSAR

Severity Level IV. The inspectors identified a Severity Level IV Non-Cited Violation (NCV), having very low safety significance of 10 CFR 50.71, "Maintenance of Records, Making of Reports," for the licensee's failure to adequately update the Byron Station Updated Final Safety Analysis Report. Specifically, the description of: (1) the boron recycle system did not identify if the system was designed or capable of handling discharges from the safety injection and residual heat removal relief valves; (2) the residual heat removal system did not identify deviations from the system design standard with respect to the suction pipe relief valve single failure analysis and collection of relief valve discharges outside containment. The licensee entered this issue into the corrective action system.

Because this finding affected the NRC's ability to perform its regulatory function, this issue was evaluated using the traditional enforcement process. The finding was determined to be more than minor because the inspectors could not reasonably determine that a change to correct the Final Safety Analysis Report to reflect actual design would not have ultimately required NRC prior approval. The finding was determined to be of very low safety significance because the design deviations associated with the residual heat removal system and boron recycle system did not impact system operability. The inspectors determined that the finding did not have a cross-cutting aspect.

Barrier Integrity

Significance:  Oct 10, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Analyze Inlet Piping Loads and Establish an Adequate HUT Quench Volume

Green. The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance, associated with the licensee's failure to analyze and establish an adequate quench volume within the boron recycle system holdup tanks and failure to analyze the water hammer loads on boron recycle system holdup tank inlet piping induced by relief valve discharges. Insufficient holdup tank quench volume could result in an overpressure failure of the holdup tank and the water hammer induced piping loads could damage the boron recycle system holdup tank inlet piping system. The licensee corrective actions included maintaining a minimum 40 percent boron recycle holdup tank level as a quench volume for system relief valves and initiated an action to perform an analysis to investigate the magnitude of the potential water hammer loads on the inlet piping.

The finding was more than minor because, the finding affects the Barrier Integrity Cornerstone objective for maintaining the Radiological Barrier Function of the Containment. The finding was associated with the design control and procedure quality attributes of the Barrier Integrity Cornerstone. The inspectors determined that the failure to establish an adequate boron recycle system holdup tank quench volume and analyze the magnitude of water hammer loads on boron recycle system holdup tank inlet piping degraded the Radiological Barrier Function of the Containment; but did not represent an actual open pathway from containment, therefore, the finding screened as having very low safety significance (Green). The inspectors determined that the finding did not have a cross-cutting aspect.

Inspection Report# : [2008009](#) (pdf)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE RADIOLIGICAL HAZARDS FOR AIRBORNE RADIOACTIVITY

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation (NCV) of Technical Specification (TS) 5.4.1 for failure to implement procedures required to evaluate radiological hazards for airborne radioactivity. Specifically, the inspectors identified that the licensee failed to re-start an air sampler on the refuel floor which supplied the only air monitoring while workers were performing activities in the area. The corrective actions taken by the licensee included starting the required air sampler. The issue was entered in the licensee's corrective action program as IR 828767.

The finding is more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that the failure to fully evaluate the radiological hazards present in work areas could result in unplanned exposure to workers. The finding was determined to be of very low safety significance because it was not an As-Low-As-Is-Reasonably-Achievable (ALARA) planning issue, there was no overexposure nor potential

for overexposure, and the licensee's ability to assess dose was not compromised. This finding was caused by inadequate self checking and peer checking. Consequently, the cause of this deficiency had a cross-cutting aspect in the area of Human Performance. Specifically, the licensee failed to utilize human error prevention techniques commensurate with the risk of the task. H.4(a)

Inspection Report# : [2008005](#) (pdf)

Public Radiation Safety

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.

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)

Last modified : December 10, 2009

Byron 2

4Q/2009 Plant Inspection Findings

Initiating Events

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*)

Mitigating Systems

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)

Significance:  Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM AN ADEQUATE RISK ASSESSMENT THAT ACCOUNTED FOR ALL RISK SIGNIFICANT STRUCTURES, SYSTEMS AND COMPONENTS THAT WERE UNAVAILABLE PRIOR TO MAINTENANCE ACTIVITIES.

A finding of very low safety significance and associated NCV of 10 CFR 50.65(a)(4) was identified by the inspectors for the licensee's failure to perform a risk assessment that accounted for the inability of the Unit 1 Essential Service Water suction valve 1SX001A to close before performing maintenance. The finding was more than minor because it was similar to NRC IMC 0612, Appendix E, "Examples of Minor Issues," Example 7e, in that the elevated overall plant risk, when correctly assessed, would have required additional risk management actions. This finding had the potential to become a more significant event if the suction valve was required to mitigate flooding in the auxiliary building.

The finding was determined to be of very low safety significance since the Incremental Core Damage Frequency (ICDP) was calculated to be $9.44E-7$ given that the condition existed for 14 days. The primary cause of this finding was related to the cross-cutting area of Human Performance for Resources (H.2(c)) because Valve 1SX001A was not added to the Paragon risk assessment computer program to allow the user to make effective risk assessments. The licensee entered this issue into their correction action program as IR 889131 and performed a risk assessment for the condition.

Inspection Report# : [2009002](#) (pdf)

Significance:  Mar 27, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain/Extend the Qualification Basis for Molded-Case Circuit Breakers (MCCBs) Used in Safety Related Applications Greater than 20 Years.

Green. A finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the failure to maintain the qualification bases for safety-related equipment. Specifically, the licensee failed to maintain/extend the qualified life of the Westinghouse molded case circuit breakers (MCCBs) after the manufacturer's qualifications ended at 20 years as required by 10 CFR Part 50, Appendix A and B. As a result, the licensee issued a condition report and performed an engineering evaluation, which supported continuing qualification of the MCCBs and an operability evaluation, which found the MCCBs operable.

The inspectors determined that the finding was more than minor because not maintaining qualified components in safety-related systems structures and components (SSCs) could lead to the inability to respond to design basis events. The finding screened as of very low safety significance because the finding was a design or qualification deficiency confirmed not to result in loss of operability or functionality. The inspectors identified a cross-cutting aspect associated with this finding in the area of problem identification and resolution because the licensee did not effectively incorporate pertinent manufacturer's operating experience into maintaining the qualification of the MCCBs. (P.2.(b))

Inspection Report# : [2009007](#) (pdf)

Significance:  Mar 27, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Analysis of Molded-Case Circuit Breaker Test Data.

•Green. A finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified by the inspectors for the failure to identify, and take corrective action to address adverse mold case circuit breaker (MCCBs) test results. Specifically, the licensee failed to recognize an excessive test failure rate, assess the impact on the installed MCCBs, promptly replace all failed MCCBs, and evaluate the past and current operability of the attached loads. As a result, the licensee issued a condition report and an operability evaluation, which found the MCCBs operable.

The inspectors determined that the finding was more than minor because not ensuring the function and operability of all required MCCBs supplying safety-related SSCs could lead to the inability to respond to design basis events. The finding screened as very low safety significance because it would not result in the total loss of a safety function. Specifically, the licensee evaluation showed that there was no loss of breaker coordination. 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 in decision-making. (H1.b)

Inspection Report# : [2009007](#) (pdf)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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*)

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.

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*)

Last modified : March 01, 2010

Byron 2

1Q/2010 Plant Inspection Findings

Initiating Events

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*)

Mitigating Systems

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*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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*)

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.

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*)

Last modified : May 26, 2010

Byron 2

2Q/2010 Plant Inspection Findings

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:  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*)

Mitigating Systems

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE EVALUATION OF SHIM PACK FOR THE UPPER STEAM GENERATOR LATERAL SUPPORTS

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the inadequate design evaluation of the shim packs for the Upper Steam Generator Lateral Supports. Specifically, the licensee's calculations failed to demonstrate that the stresses in the shims and the concrete met the acceptance criteria. The licensee entered the issue into the corrective action program (CAP) as Issue Report (IR) XXXXXX to perform/revise the design basis calculations.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attributes of Design Control and Equipment Performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance because it was a design qualification deficiency confirmed not to result in the loss of operability or functionality. This finding does not have a cross-cutting aspect due to its age. (Section 1R15.b)

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

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

LOOSE DEBRIS INSIDE OF UNIT CONTAINMENT AT THE START OF THE REFUELING OUTAGE

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow procedure BAP 1450-1, "Access to Containment." Specifically, the inspectors determined that the licensee brought loose debris items into Unit 2 containment prior to Mode 5 and did not perform an engineering evaluation required by procedure. The licensee entered this issue into the CAP as IR 1058304 and completed an evaluation to verify that the containment sump was not adversely affected.

The finding is more than minor because, if left uncorrected, the issue could have become a more significant safety concern. The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Finding," dated January 10, 2008, for the Mitigating Systems Cornerstone. Since this finding was not a design or qualification deficiency, did not result in loss of system or train safety function, and was not safety significant due to external events, this issue is screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross cutting area for the licensee's failure to coordinate work activities and the need for work groups to coordinate with each other. (H.3 (b)) (Section 1R20.b)

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

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: SL-IV Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REPORT AN AUTOMATIC RPS AND AUXILIARY FEEDWATER ACTUATION WHILE SHUTDOWN THUS IMPACTING THE REGULATORY PROCESS.

A Severity Level IV, NCV of 10 CFR 50.72(b)(3)(iv)(A) was identified by the inspectors for the licensee's failure to recognize that a valid Unit 2 automatic Reactor Protection System (RPS) and Auxiliary Feedwater (AF) actuation while shutdown were reportable conditions. Consequently, the licensee failed to make an eight hour report as required by 10 CFR 50.72. This issue was documented in the licensee's Corrective Action Program as IR 1060177 and the licensee subsequently reported the event.

This finding was evaluated under Traditional Enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. However, this violation was of very low safety significance because immediate NRC follow-up action was not required. The NRC has characterized this violation as a Severity Level IV NCV in accordance with Section IV.A.3 and Supplement 1 of the NRC Enforcement Policy. The cause of this finding was directly related to the cross-cutting area of Problem Identification and Resolution (P.1(c)) because the licensee did not thoroughly evaluate and classify a condition adverse to quality for reportability. (Section 40A3).

The performance deficiency associated with this traditional enforcement case is item 2010-003-07.

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

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REPORT AN AUTOMATIC RPS AND AUXILIARY FEEDWATER ACTUATION WHILE SHUTDOWN .

A Green Finding and associated NCV of 10 CFR 50.72(b)(3)(iv)(A) was identified by the inspectors for the licensee's failure to recognize that a valid Unit 2 automatic Reactor Protection System (RPS) and Auxiliary Feedwater (AF) actuation while shut down were reportable conditions. Consequently, the licensee failed to make an 8 hour report as required by 10 CFR 50.72. This issue was documented in the licensee's CAP as IR 1060177 and the licensee subsequently reported the event.

This finding was of very low safety significance (Green) because immediate NRC follow-up action was not required. The cause of this finding was directly related to the cross-cutting area of Problem Identification and Resolution (P.1 (c)) because the licensee did not thoroughly evaluate and classify a condition adverse to quality for reportability. (Section 40A3).

The traditional enforcement issue associated with this finding is tracked as item 2010-003-06.
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 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*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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*)

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.

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*)

Last modified : September 02, 2010

Byron 2

3Q/2010 Plant Inspection Findings

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*)

Mitigating Systems

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE EVALUATION OF SHIM PACK FOR THE UPPER STEAM GENERATOR LATERAL SUPPORTS

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the inadequate design evaluation of the shim packs for the Upper Steam Generator Lateral Supports. Specifically, the licensee's calculations failed to demonstrate that the stresses in the shims and the concrete met the acceptance criteria. The licensee entered the issue into the corrective action program (CAP) as Issue Report (IR) XXXXXX to perform/revise the design basis calculations.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attributes of Design Control and Equipment Performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance because it was a design qualification deficiency confirmed not to result in the loss of operability or functionality. This finding does not have a cross-cutting aspect due to its age. (Section 1R15.b)

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

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

LOOSE DEBRIS INSIDE OF UNIT CONTAINMENT AT THE START OF THE REFUELING OUTAGE

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow procedure BAP 1450-1, "Access to Containment." Specifically, the inspectors determined that the licensee brought loose debris items into Unit 2 containment prior to Mode 5 and did not perform an engineering evaluation required by procedure. The licensee entered this issue into the CAP as IR 1058304 and completed an evaluation to verify that the containment sump was not adversely affected.

The finding is more than minor because, if left uncorrected, the issue could have become a more significant safety concern. The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Finding," dated January 10, 2008, for the Mitigating Systems Cornerstone. Since this finding was not a design or qualification deficiency, did not result in loss of system or train safety function, and was not safety significant due to external events, this issue is screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross cutting area for the licensee's failure to coordinate work activities and the need for work groups to coordinate with each other. (H.3 (b)) (Section 1R20.b)

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

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 licensees 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: SL-IV Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REPORT AN AUTOMATIC RPS AND AUXILIARY FEEDWATER ACTUATION WHILE SHUTDOWN THUS IMPACTING THE REGULATORY PROCESS.

A Severity Level IV, NCV of 10 CFR 50.72(b)(3)(iv)(A) was identified by the inspectors for the licensee's failure to recognize that a valid Unit 2 automatic Reactor Protection System (RPS) and Auxiliary Feedwater (AF) actuation while shutdown were reportable conditions. Consequently, the licensee failed to make an eight hour report as required by 10 CFR 50.72. This issue was documented in the licensee's Corrective Action Program as IR 1060177 and the licensee subsequently reported the event.

This finding was evaluated under Traditional Enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. However, this violation was of very low safety significance because immediate NRC follow-up action was not required. The NRC has characterized this violation as a Severity Level IV NCV in accordance with Section IV.A.3 and Supplement 1 of the NRC Enforcement Policy. The cause of this finding was directly related to the cross-cutting area of Problem Identification and Resolution (P.1(c)) because the licensee did not thoroughly evaluate and classify a condition adverse to quality for reportability. (Section 4OA3).

The performance deficiency associated with this traditional enforcement case is item 2010-003-07.

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

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REPORT AN AUTOMATIC RPS AND AUXILIARY FEEDWATER ACTUATION WHILE SHUTDOWN .

A Green Finding and associated NCV of 10 CFR 50.72(b)(3)(iv)(A) was identified by the inspectors for the licensee's failure to recognize that a valid Unit 2 automatic Reactor Protection System (RPS) and Auxiliary Feedwater (AF) actuation while shut down were reportable conditions. Consequently, the licensee failed to make an 8 hour report as required by 10 CFR 50.72. This issue was documented in the licensee's CAP as IR 1060177 and the licensee subsequently reported the event.

This finding was of very low safety significance (Green) because immediate NRC follow-up action was not required. The cause of this finding was directly related to the cross-cutting area of Problem Identification and Resolution (P.1(c)) because the licensee did not thoroughly evaluate and classify a condition adverse to quality for reportability. (Section 4OA3).

The traditional enforcement issue associated with this finding is tracked as item 2010-003-06.

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*)

Barrier Integrity

Significance:  Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM ADEQUATE EVALUATION FOR CRANE UPGRADE

A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Title 10 Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion III, "Design Control" was identified by the inspectors for the licensee's failure to perform adequate evaluations to upgrade the single failure proof crane. Specifically, the inspectors identified six examples where the licensee failed to perform adequate evaluations in accordance with American Society of Mechanical Engineers (ASME) NOG-1-2004, requirements. The licensee documented the conditions in Issue Report (IR) 1099897, and IR 1100062 and initiated actions for calculation revisions and field modifications.

The Fuel Handling Building (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 crane upgrade to a single failure proof crane. The inspectors determined that the failure to perform adequate evaluations was contrary to ASME NOG-1-2004 requirements and was a performance deficiency. The finding was more than minor as it was associated with the Barrier Integrity cornerstone, because a fuel handling building crane heavy load drop can damage the Spent Fuel Pool (SFP) Cooling System or spent fuel cladding. The inspectors evaluated the finding using Inspection Manual Chapter (IMC) 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and based on a "No" answer to all of the questions in the Barrier Integrity 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, Resources because the licensee did not provide adequate oversight of work activities, including contractors, such that design documentation was accurate to support nuclear safety. H.2(c) (Section 4OA5)

Inspection Report# : [2010004](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

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*)

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.

Miscellaneous

Last modified : November 29, 2010

Byron 2

4Q/2010 Plant Inspection Findings

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*)

Mitigating Systems

Significance:  Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Instructions for the Inspection of the River Screen House and Essential Service Water Cooling Tower

A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors when licensee personnel failed to establish specific instructions for inspecting the River Screen House and Essential Service Water Cooling Tower. Specifically, the procedure that provided guidance for inspecting these structures lacked specific instructions on how to detect concrete degradation, erosion, corrosion and biological fouling. The licensee entered this issue into their corrective action program and initiated procedure revisions to provide further direction for identifying and documenting the degradation of these structures and related components.

The performance deficiency was determined to be more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The finding screened as of very low safety significance because it was a qualification deficiency confirmed not to result in a loss of operability or functionality. Specifically, a qualitative assessment of historic surveillance reports found the documented results acceptable. The inspectors determined that this finding did not represent current licensee performance and therefore no cross-cutting aspect was assigned. (Section 1R07.1)

Inspection Report# : [2010005](#) (*pdf*)

Significance:  Dec 03, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Adequate Guidance in Safe-Shutdown Procedures

A finding of very low safety-significance and associated NCV of Technical Specification 5.4.1.c for Units 1 and 2 was identified by the inspectors for the licensee's failure to provide adequate guidance in safe shutdown procedures. Specifically, the licensee failed to provide adequate guidance to reenergize the 4 kiloVolt (kV) buses, which were required to power safe shutdown components to achieve hot shutdown in the event of a fire in Fire Zone 11.3-0. The licensee subsequently entered the issue into their corrective action program and initiated actions, which included recommendations to revise safe shutdown procedures to provide guidance for recovery actions to reenergize the required affected busses.

The inspectors determined that this finding was more than minor because the failure to provide adequate procedural guidance to reenergize the 4 kV buses could have potentially compromised the ability to safely shutdown the plant in the event of a fire in Fire Zone 11.3-0. This finding was of very low safety significance (Green) based on a Phase III significance determination analysis. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R05.1R05.6.b(1))

Inspection Report# : [2010006](#) (*pdf*)

Significance:  Dec 03, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Periodically Test 125 Vdc Molded Case Circuit Breakers

. A finding of very low safety significance and associated NCV of the Byron Station facility operating licensee conditions for fire protection was identified by the inspectors for the licensee's failure to periodically test samples of molded case circuit breakers (MCCBs) at the 125 Volt direct current (Vdc) level. The licensee subsequently entered the issue into their corrective action program and verified that sufficient design margin existed such that breaker coordination would not be adversely affected.

The inspectors determined that this finding was more than minor because the failure to test the MCCBs would result in a failure to detect excessive set-point drift which impacted breaker coordination. This finding was of very low safety significance (Green) because the licensee verified that sufficient design margin existed such that breaker coordination would not be adversely affected. In addition, no failures of 125 Vdc MCCBs to trip due to set-point drift had been identified. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R05.1R05.6.b(2))

Inspection Report# : [2010006](#) (*pdf*)

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE EVALUATION OF SHIM PACK FOR THE UPPER STEAM GENERATOR LATERAL SUPPORTS

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the inadequate design evaluation of the shim packs for the Upper Steam Generator Lateral Supports. Specifically, the licensee's calculations failed to demonstrate that the stresses in the shims and the concrete met the acceptance criteria. The licensee entered the issue into the corrective action program (CAP) as Issue Report (IR) XXXXXX to perform/revise the design basis calculations.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attributes of Design Control and Equipment Performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance because it was a design qualification deficiency confirmed not to result in the loss of operability or functionality. This finding does not have a cross-cutting aspect due to its age. (Section 1R15.b)

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

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

LOOSE DEBRIS INSIDE OF UNIT CONTAINMENT AT THE START OF THE REFUELING OUTAGE

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow procedure BAP 1450-1, "Access to Containment." Specifically, the inspectors determined that the licensee brought loose debris items into Unit 2 containment prior to Mode 5 and did not perform an engineering evaluation required by procedure. The licensee entered this issue into the CAP as IR 1058304 and completed an evaluation to verify that the containment sump was not adversely affected.

The finding is more than minor because, if left uncorrected, the issue could have become a more significant safety concern. The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Finding," dated January 10, 2008, for the Mitigating Systems Cornerstone. Since this finding was not a design or qualification deficiency, did not result in loss of system or train safety function, and was not safety significant due to external events, this issue is screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross cutting area for the licensee's failure to coordinate work activities and the need for work groups to coordinate with each other. (H.3 (b)) (Section 1R20.b)

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

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 licensees 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: SL-IV Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REPORT AN AUTOMATIC RPS AND AUXILIARY FEEDWATER ACTUATION WHILE SHUTDOWN THUS IMPACTING THE REGULATORY PROCESS.

A Severity Level IV, NCV of 10 CFR 50.72(b)(3)(iv)(A) was identified by the inspectors for the licensee's failure to recognize that a valid Unit 2 automatic Reactor Protection System (RPS) and Auxiliary Feedwater (AF) actuation while shutdown were reportable conditions. Consequently, the licensee failed to make an eight hour report as required by 10 CFR 50.72. This issue was documented in the licensee's Corrective Action Program as IR 1060177 and the licensee subsequently reported the event.

This finding was evaluated under Traditional Enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. However, this violation was of very low safety significance because immediate NRC follow-up action was not required. The NRC has characterized this violation as a Severity Level IV NCV in accordance with Section IV.A.3 and Supplement 1 of the NRC Enforcement Policy. The cause of this finding was directly related to the cross-cutting area of Problem Identification and Resolution (P.1(c)) because the licensee did not thoroughly evaluate and classify a condition adverse to quality for reportability. (Section 40A3).

The performance deficiency associated with this traditional enforcement case is item 2010-003-07.

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

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REPORT AN AUTOMATIC RPS AND AUXILIARY FEEDWATER ACTUATION WHILE SHUTDOWN .

A Green Finding and associated NCV of 10 CFR 50.72(b)(3)(iv)(A) was identified by the inspectors for the licensee's failure to recognize that a valid Unit 2 automatic Reactor Protection System (RPS) and Auxiliary Feedwater (AF) actuation while shut down were reportable conditions. Consequently, the licensee failed to make an 8 hour report as required by 10 CFR 50.72. This issue was documented in the licensee's CAP as IR 1060177 and the licensee subsequently reported the event.

This finding was of very low safety significance (Green) because immediate NRC follow-up action was not required. The cause of this finding was directly related to the cross-cutting area of Problem Identification and Resolution (P.1 (c)) because the licensee did not thoroughly evaluate and classify a condition adverse to quality for reportability. (Section 40A3).

The traditional enforcement issue associated with this finding is tracked as item 2010-003-06.

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

Significance: **G** Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM ADEQUATE EVALUATION FOR CRANE UPGRADE

A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Title 10 Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion III, "Design Control" was identified by the inspectors for the licensee's failure to perform adequate evaluations to upgrade the single failure proof crane. Specifically, the inspectors identified six examples where the licensee failed to perform adequate evaluations in accordance with American Society of Mechanical Engineers (ASME) NOG-1-2004, requirements. The licensee documented the conditions in Issue Report (IR) 1099897, and IR 1100062 and initiated actions for calculation revisions and field modifications.

The Fuel Handling Building (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 crane upgrade to a single failure proof crane. The inspectors determined that the failure to perform adequate evaluations was contrary to ASME NOG-1-2004 requirements and was a performance deficiency. The finding was more than minor as it was associated with the Barrier Integrity cornerstone, because a fuel handling building crane heavy load drop can damage the Spent Fuel Pool (SFP) Cooling System or spent fuel cladding. The inspectors evaluated the finding using Inspection Manual Chapter (IMC) 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and based on a "No" answer to all of the questions in the Barrier Integrity 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, Resources because the licensee did not provide adequate oversight of work activities, including contractors, such that design documentation was accurate to support nuclear safety. H.2(c) (Section 40A5)

Inspection Report# : [2010004](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

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.

Miscellaneous

Significance: SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedures for Implementing FSAR Required Annulus Cooling (Section 40A5.2.b.1)

The inspectors identified a Severity Level IV NCV of very low safety significance of 10 CFR 72.150, "Instruction,

Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that the design basis peak fuel cladding limit would not be exceeded during canister loading operations. The licensee entered this issue into their corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance using IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," Example 2c, in that the procedures failed to incorporate thermal acceptance criteria established by the Holtec Final Safety Analysis Report and that the failure to incorporate thermal acceptance criteria was repetitive. Although the violation contributed to the likelihood of peak fuel cladding temperatures exceeding the safety limit, subsequent analysis by the licensee determined that fuel cladding temperature limits were not exceeded. The violation screened as having very low safety significance. (Section 40A5.2)

Inspection Report# : [2010005](#) (*pdf*)

Significance: SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedural Guidance for Heavy Loads Operations (Section 40A5.2.b.2)

The inspectors identified a Severity Level IV NCV of very low safety significance of 10 CFR 72.150, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that heavy loads were operated safely in the Fuel Handling Building. The licensee entered this issue into their corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance because if left uncorrected, it could lead to a more significant safety concern. Consistent with the guidance in Section 2.6.D of the NRC Enforcement Manual, if a violation does not fit an example in the Enforcement Policy Violation Examples, it should be assigned a severity level: (1) commensurate with its safety significance; and (2) informed by similar violations addressed in the Violation Examples. The violation screened as having very low safety significance. (Section 40A5.2)

Inspection Report# : [2010005](#) (*pdf*)

Significance: SL-IV Sep 17, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate procedures for Implementing FSAR Required Annulus Cooling.

The inspectors identified a Severity Level IV NCV of 10 CFR 72.150, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that the design basis peak fuel cladding temperature limit would not be exceeded during vacuum drying operations. The licensee entered this issue into its corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance because, if left uncorrected, it could lead to a more safety significant event. Although the violation contributed to the likelihood of peak fuel cladding temperatures exceeding the safety limit, subsequent analysis by the licensee and the NRC determined that fuel cladding temperature limits were not exceeded during this event; therefore, the violation screened as having very low safety significance. (Section 40A5.2)

Inspection Report# : [2010007](#) (*pdf*)

Last modified : March 03, 2011

Byron 2

1Q/2011 Plant Inspection Findings

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*)

Mitigating Systems

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE INSTRUCTIONS FOR MEASURING ECCS VOIDS

An NRC-identified finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors when licensee personnel failed to establish instructions for measuring pipe voids detected during surveillances of the emergency core cooling systems for gas accumulation. Specifically, instructions to measure the size of gas voids detected during venting at each safety injection and residual heat removal system vent location were not provided so that the effect of the void on system operability could be evaluated. The licensee entered this issue into their corrective action program and initiated procedure revisions to provide additional guidance for recording data to size voids identified during venting operations.

The performance deficiency was determined to be more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The finding screened as having very low safety significance because it did not result in a loss of operability or functionality. Specifically, a qualitative assessment of the voids detected by venting since the implementation of the licensee's resolution of Generic Letter 2008 01 established reasonable assurance that these voids did not result in a loss of operability. The inspectors did not identify a cross-cutting aspect that represented the underlying cause of this performance deficiency. Therefore, no cross-cutting aspect was assigned to this finding.

Inspection Report# : [2011002](#) (*pdf*)

Significance: **W** Feb 07, 2011

Identified By: NRC

Item Type: VIO Violation

Self-Revealing Failure of the 2A Diesel Generator Upper Lube Oil Cooler

A finding of low to moderate safety significance (White) and a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the 2A Diesel Generator (D/G) was required to be shutdown during routine monthly surveillance testing on November 17, 2010, when a flange connection on a spool piece connected to the upper lube oil cooler failed, resulting in a significant oil leak. The cause of the failure was that Work Order 1206254, "Clean Tube Side of Lube Oil Coolers," did not contain appropriate acceptance criteria to ensure proper reassembly of the spool piece for the upper lube oil cooler following maintenance on January 17, 2010. Specifically, the work order package did not contain a final torque verification to ensure that the spool piece flange bolts were torqued to required values, which resulted in the leak. The licensee entered this issue into the correction action program as Issue Report (IR) 1141591, properly re-installed the spool piece, and returned the 2A D/G to service on November 21, 2010.

The inspectors determined that this finding was more than minor, because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone and impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. The NRC assessed this finding through a Phase 3 Risk Evaluation of the Significance Determination Process and made a preliminary determination that it was an issue of low to moderate safety significance (White). The cause of this finding was related to the Work Practices component of the Human Performance cross-cutting area since licensee personnel proceeded in the face of uncertainty or unexpected circumstances during the upper lube oil cooler maintenance activity (H.4(a)). (Section 1R12)

Final Significance Determination issued in report 2011-012 on March 14, 2011.

Inspection Report# : [2011011](#) (*pdf*)

Inspection Report# : [2011012](#) (*pdf*)

Significance: **G** Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Instructions for the Inspection of the River Screen House and Essential Service Water Cooling Tower

A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors when licensee personnel failed to establish specific instructions for inspecting the River Screen House and Essential Service Water Cooling Tower. Specifically, the procedure that provided guidance for inspecting these structures lacked specific instructions on how to detect concrete degradation, erosion, corrosion and biological fouling. The licensee entered this issue into their corrective action program and initiated procedure revisions to provide further direction for identifying and documenting the degradation of these structures and related components.

The performance deficiency was determined to be more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The finding screened as of very low safety significance because it was a qualification deficiency confirmed not to result in a loss of operability or functionality. Specifically, a qualitative assessment of historic surveillance reports found the documented results acceptable. The inspectors determined that this finding did not represent current licensee performance and therefore no cross-cutting aspect was assigned. (Section 1R07.1)

Inspection Report# : [2010005](#) (*pdf*)

Significance: **G** Dec 03, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Adequate Guidance in Safe-Shutdown Procedures

A finding of very low safety-significance and associated NCV of Technical Specification 5.4.1.c for Units 1 and 2

was identified by the inspectors for the licensee's failure to provide adequate guidance in safe shutdown procedures. Specifically, the licensee failed to provide adequate guidance to reenergize the 4 kiloVolt (kV) buses, which were required to power safe shutdown components to achieve hot shutdown in the event of a fire in Fire Zone 11.3-0. The licensee subsequently entered the issue into their corrective action program and initiated actions, which included recommendations to revise safe shutdown procedures to provide guidance for recovery actions to reenergize the required affected busses.

The inspectors determined that this finding was more than minor because the failure to provide adequate procedural guidance to reenergize the 4 kV buses could have potentially compromised the ability to safely shutdown the plant in the event of a fire in Fire Zone 11.3-0. This finding was of very low safety significance (Green) based on a Phase III significance determination analysis. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R05.1R05.6.b(1))

Inspection Report# : [2010006](#) (pdf)

Significance:  Dec 03, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Periodically Test 125 Vdc Molded Case Circuit Breakers

. A finding of very low safety significance and associated NCV of the Byron Station facility operating licensee conditions for fire protection was identified by the inspectors for the licensee's failure to periodically test samples of molded case circuit breakers (MCCBs) at the 125 Volt direct current (Vdc) level. The licensee subsequently entered the issue into their corrective action program and verified that sufficient design margin existed such that breaker coordination would not be adversely affected.

The inspectors determined that this finding was more than minor because the failure to test the MCCBs would result in a failure to detect excessive set-point drift which impacted breaker coordination. This finding was of very low safety significance (Green) because the licensee verified that sufficient design margin existed such that breaker coordination would not be adversely affected. In addition, no failures of 125 Vdc MCCBs to trip due to set-point drift had been identified. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R05.1R05.6.b(2))

Inspection Report# : [2010006](#) (pdf)

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE EVALUATION OF SHIM PACK FOR THE UPPER STEAM GENERATOR LATERAL SUPPORTS

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the inadequate design evaluation of the shim packs for the Upper Steam Generator Lateral Supports. Specifically, the licensee's calculations failed to demonstrate that the stresses in the shims and the concrete met the acceptance criteria. The licensee entered the issue into the corrective action program (CAP) as Issue Report (IR) XXXXXX to perform/revise the design basis calculations.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attributes of Design Control and Equipment Performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance because it was a design qualification deficiency confirmed not to result in the loss of operability or functionality. This finding does not have a cross-cutting aspect due to its age. (Section 1R15.b)

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

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

LOOSE DEBRIS INSIDE OF UNIT CONTAINMENT AT THE START OF THE REFUELING OUTAGE

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow procedure BAP 1450-1, "Access to Containment." Specifically, the inspectors determined that the licensee brought loose debris items into Unit 2 containment prior to Mode 5 and did not perform an engineering evaluation required by procedure. The licensee entered this issue into the CAP as IR 1058304 and completed an evaluation to verify that the containment sump was not adversely affected.

The finding is more than minor because, if left uncorrected, the issue could have become a more significant safety concern. The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Finding," dated January 10, 2008, for the Mitigating Systems Cornerstone. Since this finding was not a design or qualification deficiency, did not result in loss of system or train safety function, and was not safety significant due to external events, this issue is screened as very low safety significance. This finding is related to the Work Control component of the Human Performance cross cutting area for the licensee's failure to coordinate work activities and the need for work groups to coordinate with each other. (H.3 (b)) (Section 1R20.b)

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

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 licensees 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: SL-IV Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REPORT AN AUTOMATIC RPS AND AUXILIARY FEEDWATER ACTUATION WHILE SHUTDOWN THUS IMPACTING THE REGULATORY PROCESS.

A Severity Level IV, NCV of 10 CFR 50.72(b)(3)(iv)(A) was identified by the inspectors for the licensee's failure to recognize that a valid Unit 2 automatic Reactor Protection System (RPS) and Auxiliary Feedwater (AF) actuation while shutdown were reportable conditions. Consequently, the licensee failed to make an eight hour report as required by 10 CFR 50.72. This issue was documented in the licensee's Corrective Action Program as IR 1060177 and the licensee subsequently reported the event.

This finding was evaluated under Traditional Enforcement because it had the potential for impacting the NRC's ability to perform its regulatory function. However, this violation was of very low safety significance because immediate NRC follow-up action was not required. The NRC has characterized this violation as a Severity Level IV NCV in accordance with Section IV.A.3 and Supplement 1 of the NRC Enforcement Policy. The cause of this finding was directly related to the cross-cutting area of Problem Identification and Resolution (P.1(c)) because the licensee did not thoroughly evaluate and classify a condition adverse to quality for reportability. (Section 4OA3).

The performance deficiency associated with this traditional enforcement case is item 2010-003-07.

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

Significance:  Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO REPORT AN AUTOMATIC RPS AND AUXILIARY FEEDWATER ACTUATION WHILE SHUTDOWN .

A Green Finding and associated NCV of 10 CFR 50.72(b)(3)(iv)(A) was identified by the inspectors for the licensee's failure to recognize that a valid Unit 2 automatic Reactor Protection System (RPS) and Auxiliary Feedwater (AF) actuation while shut down were reportable conditions. Consequently, the licensee failed to make an 8 hour report as required by 10 CFR 50.72. This issue was documented in the licensee's CAP as IR 1060177 and the licensee subsequently reported the event.

This finding was of very low safety significance (Green) because immediate NRC follow-up action was not required. The cause of this finding was directly related to the cross-cutting area of Problem Identification and Resolution (P.1 (c)) because the licensee did not thoroughly evaluate and classify a condition adverse to quality for reportability. (Section 4OA3).

The traditional enforcement issue associated with this finding is tracked as item 2010-003-06.

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

Barrier Integrity

Significance:  Mar 31, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

SELF-REVEALED LOW FLOW TO REACTOR CONTAINMENT FAN COOLER

A self-revealed finding of very low safety significance was identified on January 21, 2011, when licensee personnel

failed to ensure that surveillance procedures for measuring essential service water flow through reactor containment fan coolers was adequate. As a result, during routine surveillance testing, measured essential service water flow through the reactor containment fan coolers was less than technical specification requirements.

The inspectors concluded that the finding was more than minor because it was associated with the Configuration Control attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical barriers, including the containment, protect the public from radionuclide releases caused by accidents and events. Specifically, the finding was determined to adversely impact the required technical specification required flow rate of essential service water through the reactor containment fan coolers. The inspectors evaluated the finding using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and based on a "No" answer to all of the questions in the Barrier Integrity column of Table 4a, determined the finding to be of very low safety significance. This finding had a cross-cutting aspect in the area of Human Performance, Resources (H.2(c)) because the licensee had repeatedly modified the surveillance procedure without ensuring adequate operational margin to the technical specification limit. The licensee entered this issue into the corrective action program and initiated actions to revise the surveillance procedure to raise the as-left essential service water system flow rate.

Inspection Report# : [2011002](#) (*pdf*)

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE THE EFFECTS OF DYNAMIC LOADS AT THE CS DISCHARGE PIPING

An NRC-identified finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors when licensee personnel failed to evaluate the effects of dynamic loads at the containment spray discharge piping. The inspectors were concerned because portions of the containment spray discharge piping were normally voided by design and neither the structural design nor operation of the system addressed the dynamic loads that would result when the voided piping was rapidly filled following system initiation. The licensee entered this issue into the corrective action program and, at the time of the inspection, planned to include an evaluation of dynamic loads into the design basis of containment spray.

The performance deficiency was determined to be more than minor because it was associated with the Structures, Systems, Components, and Barrier Performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as having very low safety significance because it did not affect either core damage frequency or large early release frequency. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, because the licensee did not thoroughly evaluate external operating experience.

Inspection Report# : [2011002](#) (*pdf*)

Significance:  Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM ADEQUATE EVALUATION FOR CRANE UPGRADE

A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Title 10 Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion III, "Design Control" was identified by the inspectors for the licensee's failure to perform adequate evaluations to upgrade the single failure proof crane. Specifically, the inspectors identified six examples where the licensee failed to perform adequate evaluations in accordance with American Society of Mechanical Engineers (ASME) NOG-1-2004, requirements. The licensee documented the conditions in Issue Report (IR) 1099897, and IR 1100062 and initiated actions for calculation revisions and field modifications.

The Fuel Handling Building (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 crane upgrade to a single failure proof crane. The inspectors determined that the failure to perform adequate evaluations was contrary to ASME NOG-1-2004 requirements and was a performance deficiency. The finding was more than minor as it was associated with the Barrier Integrity cornerstone, because a fuel handling building crane heavy load drop can damage the Spent Fuel Pool (SFP) Cooling System or spent fuel cladding. The inspectors evaluated the finding using Inspection Manual Chapter

(IMC) 0609.04, “Phase 1 - Initial Screening and Characterization of Findings,” and based on a “No” answer to all of the questions in the Barrier Integrity 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, Resources because the licensee did not provide adequate oversight of work activities, including contractors, such that design documentation was accurate to support nuclear safety. H.2(c) (Section 4OA5)

Inspection Report# : [2010004](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

OUT-OF-DATE/EXPIRED RESPIRATOR CARTRIDGES

An NRC-identified finding of very low safety significance and an associated NCV of TS 5.4.1 was identified by the inspectors when out of date respirator cartridges were found available for use. Radiation protection procedures that cover respiratory protection program did not require cartridges to be replaced after the manufacturer specified shelf-life had expired. The manufacturer of the respirator canister recognized that it was possible that chemical cartridges, which were more than a year old, might lose some of their efficiency in their ability to absorb contaminants. The manufacturer prescribed an expiration date of 3 years from the date of the canister manufacture and this date was stamped on to the canister label.

The regulatory authority for respiratory protection is the Occupational Safety and Health Administration (OSHA). The regulations are defined in 29 CFR 1910.134 titled “Respiratory Protection.” Title 29 CFR 1910.134(d)(3)(iii) provides requirements for the protection against gases and vapors. These requirements include that air purifying respirators be equipped with an End-of-Service Life Indicator (ESLI) or the employer implements a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. The employer shall describe in the respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.

The inspectors reviewed the guidance in IMC 0612, Appendix E, Examples of Minor Issues, but did not identify any examples similar to the performance deficiency. However, in accordance with IMC 0612, the inspectors determined that the finding was more than minor because if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, cartridges that were beyond the recommended shelf-life could lose some of their efficiency in their ability to absorb contaminants and result in additional radiation doses to the users. The finding was assessed using the Occupational Radiation SDP and was determined to be of very low safety significance because these problems were not as-low-as-is-reasonably-achievable (ALARA) planning issues, there were no overexposures, nor substantial potential for overexposures and the licensee’s ability to assess dose was not compromised. Corrective actions planned by the licensee included replacing the expired cartridges and adding guidance to procedures for checking expiration dates during routine inventories. The inspectors determined that the cause of this incident involved a cross-cutting component in the human performance area for inadequate resources. Specifically, the licensee did not have complete, accurate and up-to-date procedures.

Inspection Report# : [2011002](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Significance: SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedures for Implementing FSAR Required Annulus Cooling (Section 40A5.2.b.1)

The inspectors identified a Severity Level IV NCV of very low safety significance of 10 CFR 72.150, "Instruction, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that the design basis peak fuel cladding limit would not be exceeded during canister loading operations. The licensee entered this issue into their corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance using IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," Example 2c, in that the procedures failed to incorporate thermal acceptance criteria established by the Holtec Final Safety Analysis Report and that the failure to incorporate thermal acceptance criteria was repetitive. Although the violation contributed to the likelihood of peak fuel cladding temperatures exceeding the safety limit, subsequent analysis by the licensee determined that fuel cladding temperature limits were not exceeded. The violation screened as having very low safety significance. (Section 40A5.2)

Inspection Report# : [2010005](#) (*pdf*)

Significance: SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedural Guidance for Heavy Loads Operations (Section 40A5.2.b.2)

The inspectors identified a Severity Level IV NCV of very low safety significance of 10 CFR 72.150, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that heavy loads were operated safely in the Fuel Handling Building. The licensee entered this issue into their corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance because if left uncorrected, it could lead to a more significant safety concern. Consistent with the guidance in Section 2.6.D of the NRC Enforcement Manual, if a violation does not fit an example in the Enforcement Policy Violation Examples, it should be assigned a severity level: (1) commensurate with its safety significance; and (2) informed by similar violations addressed in the Violation Examples. The violation screened as having very low safety significance. (Section 40A5.2)

Inspection Report# : [2010005](#) (*pdf*)

Significance: SL-IV Sep 17, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate procedures for Implementing FSAR Required Annulus Cooling.

The inspectors identified a Severity Level IV NCV of 10 CFR 72.150, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that the design basis peak fuel cladding temperature limit would not be exceeded during vacuum drying operations. The licensee entered this issue into its corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance because, if left uncorrected, it could lead to a more safety significant event. Although the violation contributed to the likelihood of peak fuel cladding temperatures exceeding the safety limit, subsequent analysis by the licensee and the NRC determined that fuel cladding temperature limits were not exceeded during this event; therefore, the violation screened as having very low safety significance.

(Section 4OA5.2)

Inspection Report# : [2010007](#) (*pdf*)

Last modified : June 07, 2011

Byron 2

2Q/2011 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ENSURE THAT THE DESIGN OF THE AF SUCTION PIPING WAS ADEQUATE TO PREVENT AIR ENTRAINMENT FOLLOWING A SEISMIC OR TORNADO EVENT

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to analyze whether the design of the auxiliary feedwater system ensured that air entrained into the system following a postulated seismic or tornado event did not prevent the system from performing its safety function. Specifically, licensee personnel failed to evaluate the failure of non-seismically qualified condensate storage tank suction piping during an earthquake or tornado that would cause the operating auxiliary feedwater pumps to draw air from the break location, potentially air-binding the pumps. The licensee entered this issue into their corrective action program to determine the required changes to the design of the system and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Protection 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. The finding screened as having very low safety significance because it was a design deficiency confirmed not to result in a loss of operability or functionality. The inspectors determined that there was no cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2011003](#) (*pdf*)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Specify and Perform Required Independent Quality Verification Hold Point Inspections.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion X, "Inspection," for the failure to ensure that independent quality verification (QV) inspection hold points (HPs) were specified in work orders (WOs) used during Raychem splicing activities on a safety-related instrumentation cable, in the containment. Specifically, during replacement of the failed RCS Loop 1B Wide-Range, Hot-Leg (resistance temperature detector) RTD 1TE-RC023A in 2006 and in 2008, the licensee used electrical Raychem splices to connect the RTD leads to its cable without including the required QV inspection HPs in the associated WO instructions. Consequently, the QV independent inspections were not performed as required by Exelon corporate Nuclear Oversight (NO) and Maintenance procedures and by the Quality Assurance Topical Report (QATR). Subsequently, the licensee initiated corrective actions to rework the Raychem splice at the next window of opportunity and to communicate and reinforce the importance of inclusion of QV HP inspections, when required. This issue was entered into the licensee's corrective action program (CAP) under Issue Reports (IRs) 01226961, 01214766, 01217502 and 01218406.

The failure to ensure that independent QV HP inspections were included in WO instructions as required by Exelon Corporate procedures and the QATR was a performance deficiency. This performance deficiency was more than minor because, if left uncorrected, it would lead to a more significant safety concern in that the failure to

independently verify quality attributes in safety-related equipment could involve an adverse impact to plant equipment. The inspectors concluded that this finding was associated with the Mitigating Systems Cornerstone. This performance deficiency was determined to have very low safety significance in Phase I of the SDP, since it was confirmed to involve a lack of required QV HPs for this Raychem splicing activity that did not result in a loss of operability or functionality. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because the licensee did not have an effective systematic process for obtaining interdisciplinary reviews of proposed maintenance work instructions to determine whether independent QV HP inspections were appropriately specified and implemented to assure plant safety. [H.1(a)] (Section 1R17.2.b)
Inspection Report# : [2011009](#) (*pdf*)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Procedure Requirements for Temporary Scaffolds that Remain in Place for Over 90 Days.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” related to inadequate control of installed temporary scaffolds. Specifically, licensee’s procedure for the installation, modification, and removal of scaffolds was not followed, on a routine basis, for temporary scaffolds that remained in the plant for greater than 90 days. This could impact the operability or availability of plant system. The licensee entered this issue into the CAP as IR 01212656. Corrective actions for this issue included an investigation as to why procedure adherence issues with regard to scaffolds continue to occur and an extent of condition review of similar plant programs.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix E, “Examples of Minor Issues.” Specifically, the inspectors concluded that this issue was similar to the more than minor criteria established in Example 4.a, “Insignificant Procedural Errors,” since the licensee failed to perform the required engineering evaluation for the temporary installed scaffolding that remained in the plant for more than 90 days. Therefore, this performance deficiency also impacted the Mitigating Systems Cornerstone objective of protection against external events (seismic events). The finding was of very low safety significance because there was not a confirmed loss of operability of any mitigating system component. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision-Making, because the licensee did not make the appropriate safety or risk significant decisions by failing to utilize the systematic scaffolding construction process to ensure adequate quality and, therefore, adequate safety was maintained when scaffolds remained installed for greater than 90 days. [H.1(a)]. (Section 4OA2.b.(1))

Inspection Report# : [2011009](#) (*pdf*)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

EDG Usable Fuel Calculations Failed to Consider Appropriate EDG Frequency Variations.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to correctly translate applicable design basis (calculations) into specifications. Specifically, the licensee failed to take into account fuel oil consumption at an increased frequency of 61.2 Hz in their EDG loading calculations which resulted in non-conservative Technical Specifications. The licensee entered this finding into their corrective action program as IR 01226844 and implemented actions to evaluate incorporation of the EDG frequency administrative limits into applicable site operating procedures to ensure an adequate supply of fuel was available.

The inspectors determined that this finding was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to account for the increased fuel oil consumption resulting from operation at a higher EDG frequency variation of 61.2 Hz as allowed by TS 3.8.1 and room temperature of up to 120°F in their EDG loading calculations. Therefore, the licensee did not ensure that the minimum fuel oil level in the storage tanks, as required per TS 3.8.3, was adequate to support the EDGs’ 7-day mission time. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution Corrective Action Program because the licensee did not

thoroughly evaluate the EDG fuel oil consumption when considering EDG frequency variation. Specifically, the licensee failed to translate applicable design bases into specifications, which resulted in non-conservative TS. [P.1(c)] (Section 40A2.b.(2))

Inspection Report# : [2011009](#) (*pdf*)

Significance: **G** May 04, 2011

Identified By: NRC

Item Type: FIN Finding

Failure to Adequately Document and Justify Continued Operability of the Auxiliary Feedwater System.

A finding of very low safety significance was identified at the Braidwood and Byron Stations by the inspectors when licensee personnel failed to adequately document and justify continued operability of the auxiliary feedwater (AF) system. Specifically, licensee evaluations of known voids in the AF alternate source suction piping did not provide an adequate technical basis to support operability of the AF pumps during a suction swap-over scenario. Subsequently, the licensee filled the voids and a Root Cause Evaluation (RCE) was initiated under Issue Report (IR) 1194196 (Braidwood) and IR 1194324 (Byron). The RCE was initiated to determine why prior opportunities for discovery of the inadequate void acceptance basis were missed and to develop associated corrective actions.

The inspectors determined the finding was more than minor because, if left uncorrected, the failure to recognize conditions that could render equipment inoperable had the potential to lead to a more significant safety concern. Because the finding was not a design deficiency, did not result in a loss of safety function, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event, the inspectors concluded that the finding was of very low safety significance (Green). This finding was associated with a cross-cutting aspect in the Decision-Making component of the Human Performance cross-cutting area because the licensee did not use conservative assumptions and did not verify the validity of underlying assumptions in their evaluations of the AF suction piping voids. (H.1(b)) (Section 40A5.1.7.b)

Inspection Report# : [2011015](#) (*pdf*)

Significance: **G** Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE INSTRUCTIONS FOR MEASURING ECCS VOIDS

An NRC-identified finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors when licensee personnel failed to establish instructions for measuring pipe voids detected during surveillances of the emergency core cooling systems for gas accumulation. Specifically, instructions to measure the size of gas voids detected during venting at each safety injection and residual heat removal system vent location were not provided so that the effect of the void on system operability could be evaluated. The licensee entered this issue into their corrective action program and initiated procedure revisions to provide additional guidance for recording data to size voids identified during venting operations.

The performance deficiency was determined to be more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The finding screened as having very low safety significance because it did not result in a loss of operability or functionality. Specifically, a qualitative assessment of the voids detected by venting since the implementation of the licensee's resolution of Generic Letter 2008 01 established reasonable assurance that these voids did not result in a loss of operability. The inspectors did not identify a cross-cutting aspect that represented the underlying cause of this performance deficiency. Therefore, no cross-cutting aspect was assigned to this finding.

Inspection Report# : [2011002](#) (*pdf*)

Significance: **W** Feb 07, 2011

Identified By: NRC

Item Type: VIO Violation

Self-Revealing Failure of the 2A Diesel Generator Upper Lube Oil Cooler

A finding of low to moderate safety significance (White) and a violation of 10 CFR Part 50, Appendix B, Criterion V,

“Instructions, Procedures, and Drawings,” was self-revealed when the 2A Diesel Generator (D/G) was required to be shutdown during routine monthly surveillance testing on November 17, 2010, when a flange connection on a spool piece connected to the upper lube oil cooler failed, resulting in a significant oil leak. The cause of the failure was that Work Order 1206254, “Clean Tube Side of Lube Oil Coolers,” did not contain appropriate acceptance criteria to ensure proper reassembly of the spool piece for the upper lube oil cooler following maintenance on January 17, 2010. Specifically, the work order package did not contain a final torque verification to ensure that the spool piece flange bolts were torqued to required values, which resulted in the leak. The licensee entered this issue into the correction action program as Issue Report (IR) 1141591, properly re-installed the spool piece, and returned the 2A D/G to service on November 21, 2010.

The inspectors determined that this finding was more than minor, because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone and impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. The NRC assessed this finding through a Phase 3 Risk Evaluation of the Significance Determination Process and made a preliminary determination that it was an issue of low to moderate safety significance (White). The cause of this finding was related to the Work Practices component of the Human Performance cross-cutting area since licensee personnel proceeded in the face of uncertainty or unexpected circumstances during the upper lube oil cooler maintenance activity (H.4(a)). (Section 1R12)

Final Significance Determination issued in report 2011-012 on March 14, 2011.

Inspection Report# : [2011012](#) (*pdf*)

Inspection Report# : [2011011](#) (*pdf*)

Inspection Report# : [2011016](#) (*pdf*)

Significance:  Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Instructions for the Inspection of the River Screen House and Essential Service Water Cooling Tower

A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was identified by the inspectors when licensee personnel failed to establish specific instructions for inspecting the River Screen House and Essential Service Water Cooling Tower. Specifically, the procedure that provided guidance for inspecting these structures lacked specific instructions on how to detect concrete degradation, erosion, corrosion and biological fouling. The licensee entered this issue into their corrective action program and initiated procedure revisions to provide further direction for identifying and documenting the degradation of these structures and related components.

The performance deficiency was determined to be more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The finding screened as of very low safety significance because it was a qualification deficiency confirmed not to result in a loss of operability or functionality. Specifically, a qualitative assessment of historic surveillance reports found the documented results acceptable. The inspectors determined that this finding did not represent current licensee performance and therefore no cross-cutting aspect was assigned. (Section 1R07.1)

Inspection Report# : [2010005](#) (*pdf*)

Significance:  Dec 03, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Adequate Guidance in Safe-Shutdown Procedures

A finding of very low safety-significance and associated NCV of Technical Specification 5.4.1.c for Units 1 and 2 was identified by the inspectors for the licensee's failure to provide adequate guidance in safe shutdown procedures. Specifically, the licensee failed to provide adequate guidance to reenergize the 4 kiloVolt (kV) buses, which were required to power safe shutdown components to achieve hot shutdown in the event of a fire in Fire Zone 11.3-0. The licensee subsequently entered the issue into their corrective action program and initiated actions, which included recommendations to revise safe shutdown procedures to provide guidance for recovery actions to reenergize the

required affected busses.

The inspectors determined that this finding was more than minor because the failure to provide adequate procedural guidance to reenergize the 4 kV buses could have potentially compromised the ability to safely shutdown the plant in the event of a fire in Fire Zone 11.3-0. This finding was of very low safety significance (Green) based on a Phase III significance determination analysis. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R05.1R05.6.b(1))

Inspection Report# : [2010006](#) (*pdf*)

Significance:  Dec 03, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Periodically Test 125 Vdc Molded Case Circuit Breakers

. A finding of very low safety significance and associated NCV of the Byron Station facility operating licensee conditions for fire protection was identified by the inspectors for the licensee's failure to periodically test samples of molded case circuit breakers (MCCBs) at the 125 Volt direct current (Vdc) level. The licensee subsequently entered the issue into their corrective action program and verified that sufficient design margin existed such that breaker coordination would not be adversely affected.

The inspectors determined that this finding was more than minor because the failure to test the MCCBs would result in a failure to detect excessive set-point drift which impacted breaker coordination. This finding was of very low safety significance (Green) because the licensee verified that sufficient design margin existed such that breaker coordination would not be adversely affected. In addition, no failures of 125 Vdc MCCBs to trip due to set-point drift had been identified. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R05.1R05.6.b(2))

Inspection Report# : [2010006](#) (*pdf*)

Barrier Integrity

Significance:  Mar 31, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

SELF-REVEALED LOW FLOW TO REACTOR CONTAINMENT FAN COOLER

A self-revealed finding of very low safety significance was identified on January 21, 2011, when licensee personnel failed to ensure that surveillance procedures for measuring essential service water flow through reactor containment fan coolers was adequate. As a result, during routine surveillance testing, measured essential service water flow through the reactor containment fan coolers was less than technical specification requirements.

The inspectors concluded that the finding was more than minor because it was associated with the Configuration Control attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical barriers, including the containment, protect the public from radionuclide releases caused by accidents and events. Specifically, the finding was determined to adversely impact the required technical specification required flow rate of essential service water through the reactor containment fan coolers. The inspectors evaluated the finding using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and based on a "No" answer to all of the questions in the Barrier Integrity column of Table 4a, determined the finding to be of very low safety significance. This finding had a cross-cutting aspect in the area of Human Performance, Resources (H.2(c)) because the licensee had repeatedly modified the surveillance procedure without ensuring adequate operational margin to the technical specification limit. The licensee entered this issue into the corrective action program and initiated actions to revise the surveillance procedure to raise the as-left essential service water system flow rate.

Inspection Report# : [2011002](#) (*pdf*)

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE THE EFFECTS OF DYNAMIC LOADS AT THE CS DISCHARGE PIPING

An NRC-identified finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors when licensee personnel failed to evaluate the effects of dynamic loads at the containment spray discharge piping. The inspectors were concerned because portions of the containment spray discharge piping were normally voided by design and neither the structural design nor operation of the system addressed the dynamic loads that would result when the voided piping was rapidly filled following system initiation. The licensee entered this issue into the corrective action program and, at the time of the inspection, planned to include an evaluation of dynamic loads into the design basis of containment spray.

The performance deficiency was determined to be more than minor because it was associated with the Structures, Systems, Components, and Barrier Performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as having very low safety significance because it did not affect either core damage frequency or large early release frequency. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, because the licensee did not thoroughly evaluate external operating experience.

Inspection Report# : [2011002](#) (*pdf*)

Significance:  Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM ADEQUATE EVALUATION FOR CRANE UPGRADE

A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Title 10 Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion III, "Design Control" was identified by the inspectors for the licensee's failure to perform adequate evaluations to upgrade the single failure proof crane. Specifically, the inspectors identified six examples where the licensee failed to perform adequate evaluations in accordance with American Society of Mechanical Engineers (ASME) NOG-1-2004, requirements. The licensee documented the conditions in Issue Report (IR) 1099897, and IR 1100062 and initiated actions for calculation revisions and field modifications.

The Fuel Handling Building (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 crane upgrade to a single failure proof crane. The inspectors determined that the failure to perform adequate evaluations was contrary to ASME NOG-1-2004 requirements and was a performance deficiency. The finding was more than minor as it was associated with the Barrier Integrity cornerstone, because a fuel handling building crane heavy load drop can damage the Spent Fuel Pool (SFP) Cooling System or spent fuel cladding. The inspectors evaluated the finding using Inspection Manual Chapter (IMC) 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and based on a "No" answer to all of the questions in the Barrier Integrity 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, Resources because the licensee did not provide adequate oversight of work activities, including contractors, such that design documentation was accurate to support nuclear safety. H.2(c) (Section 40A5)

Inspection Report# : [2010004](#) (*pdf*)

Emergency Preparedness

Significance: SL-IV Jun 22, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval

The inspector identified a violation of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54(q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which

indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner. The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance. (Section 1EP4)

The related performance deficiency is tracked as item 200-502-02.

Inspection Report# : [2010502](#) (*pdf*)

Significance:  Jun 22, 2011

Identified By: NRC

Item Type: FIN Finding

Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval

The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding. (Section 1EP4)

The associated traditional enforcement item is tracked as item 2011-50X-01.

Inspection Report# : [2010502](#) (*pdf*)

Occupational Radiation Safety

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

OUT-OF-DATE/EXPIRED RESPIRATOR CARTRIDGES

An NRC-identified finding of very low safety significance and an associated NCV of TS 5.4.1 was identified by the inspectors when out of date respirator cartridges were found available for use. Radiation protection procedures that cover respiratory protection program did not require cartridges to be replaced after the manufacturer specified shelf-life had expired. The manufacturer of the respirator canister recognized that it was possible that chemical cartridges, which were more than a year old, might lose some of their efficiency in their ability to absorb contaminants. The manufacturer prescribed an expiration date of 3 years from the date of the canister manufacture and this date was stamped on to the canister label.

The regulatory authority for respiratory protection is the Occupational Safety and Health Administration (OSHA). The

regulations are defined in 29 CFR 1910.134 titled "Respiratory Protection." Title 29 CFR 1910.134(d)(3)(iii) provides requirements for the protection against gases and vapors. These requirements include that air purifying respirators be equipped with an End-of-Service Life Indicator (ESLI) or the employer implements a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. The employer shall describe in the respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data. The inspectors reviewed the guidance in IMC 0612, Appendix E, Examples of Minor Issues, but did not identify any examples similar to the performance deficiency. However, in accordance with IMC 0612, the inspectors determined that the finding was more than minor because if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, cartridges that were beyond the recommended shelf-life could lose some of their efficiency in their ability to absorb contaminants and result in additional radiation doses to the users. The finding was assessed using the Occupational Radiation SDP and was determined to be of very low safety significance because these problems were not as-low-as-is-reasonably-achievable (ALARA) planning issues, there were no overexposures, nor substantial potential for overexposures and the licensee's ability to assess dose was not compromised. Corrective actions planned by the licensee included replacing the expired cartridges and adding guidance to procedures for checking expiration dates during routine inventories. The inspectors determined that the cause of this incident involved a cross-cutting component in the human performance area for inadequate resources. Specifically, the licensee did not have complete, accurate and up-to-date procedures.

Inspection Report# : [2011002](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Significance: SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedures for Implementing FSAR Required Annulus Cooling (Section 40A5.2.b.1)

The inspectors identified a Severity Level IV NCV of very low safety significance of 10 CFR 72.150, "Instruction, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that the design basis peak fuel cladding limit would not be exceeded during canister loading operations. The licensee entered this issue into their corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance using IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," Example 2c, in that the procedures failed to incorporate thermal acceptance criteria established by the Holtec Final Safety Analysis Report and that the failure to incorporate thermal acceptance criteria was repetitive. Although the violation contributed to the likelihood of peak fuel cladding temperatures exceeding the safety limit, subsequent analysis by the licensee determined that fuel cladding temperature limits were not exceeded. The violation screened as having very low safety significance. (Section 40A5.2)

Inspection Report# : [2010005](#) (*pdf*)

Significance: SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedural Guidance for Heavy Loads Operations (Section 40A5.2.b.2)

The inspectors identified a Severity Level IV NCV of very low safety significance of 10 CFR 72.150, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that heavy loads were operated safely in the Fuel Handling Building. The licensee entered this issue into their corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance because if left uncorrected, it could lead to a more significant safety concern. Consistent with the guidance in Section 2.6.D of the NRC Enforcement Manual, if a violation does not fit an example in the Enforcement Policy Violation Examples, it should be assigned a severity level: (1) commensurate with its safety significance; and (2) informed by similar violations addressed in the Violation Examples. The violation screened as having very low safety significance. (Section 40A5.2)

Inspection Report# : [2010005](#) (*pdf*)

Significance: SL-IV Sep 17, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate procedures for Implementing FSAR Required Annulus Cooling.

The inspectors identified a Severity Level IV NCV of 10 CFR 72.150, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that the design basis peak fuel cladding temperature limit would not be exceeded during vacuum drying operations. The licensee entered this issue into its corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance because, if left uncorrected, it could lead to a more safety significant event. Although the violation contributed to the likelihood of peak fuel cladding temperatures exceeding the safety limit, subsequent analysis by the licensee and the NRC determined that fuel cladding temperature limits were not exceeded during this event; therefore, the violation screened as having very low safety significance. (Section 40A5.2)

Inspection Report# : [2010007](#) (*pdf*)

Last modified : October 14, 2011

Byron 2

3Q/2011 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY ELEVATED RISK STATUS

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear power Plants,” when licensee personnel failed to accurately assess plant risk during maintenance activities. The inspectors determined that the licensee failed to identify and take actions required to address an increase in risk when the Unit 2 Component Cooling Water (CC) heat exchanger was removed from service. Specifically, for 0.6 days the Unit 2 CC heat exchanger was removed from service and the plant remained in a Green risk status although the licensee's maintenance risk management procedure prescribed that a Yellow risk status be entered and that certain Risk Management Actions (RMAs) be taken. Upon identification and notification by the NRC inspectors, licensee personnel revised the plant risk status from Green to Yellow and took the appropriate RMAs. The issue was entered into the licensee’s corrective action program as Issue Report (IR) 1262639.

The performance deficiency was determined to be more than minor because it was associated with the Human Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The performance deficiency was also determined to be more than minor because the finding was similar to IMC 0609, Appendix E, Example 7.e, and resulted in actual plant risk being in a higher risk category established by the licensee than had been previously declared. The Byron Standardized Plant Analysis Risk (SPAR) model Version 8.18 and SAPHIRE model Version 8.0.7.17 was used to calculate an Incremental Core Damage Probability Deficit (ICDPD) for the condition of the Unit 2 CC heat exchanger being unavailable for 0.6 days. The result was an ICDPD of less than $5E-7$. Based on the analysis, the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect in the Work Control component of the Human Performance cross-cutting area [H.3.(a)] because the licensee failed to appropriately incorporate risk insights when the Unit 2 CC heat exchanger was removed from service. (Section 1R13)

Inspection Report# : [2011004](#) (*pdf*)

Significance: SL-IV Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a Severity Level IV NCV of 10 CFR 50.59, “Changes, Tests, and Experiments,” when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification to the facility that permitted the Unit 1 and Unit 2 “A” Auxiliary Feedwater (AF) trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee issued a Standing Order to modify the Emergency Operating Procedure which governed the use of the modification and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The issue was entered into the licensee’s corrective action program as IR 1257908.

The violation was determined to be more than minor because the inspectors determined that the change required prior NRC approval. Violations of 10 CFR 50.59 are dispositioned using the traditional enforcement process because they are considered to be violations that potentially impede or impact the regulatory process. In accordance with Section 6.1.d.2 of the NRC Enforcement Policy, this violation is categorized as Severity Level IV because the resulting changes were evaluated by the SDP as having very low safety significance. (Section 40A2.3)

The associated performance deficiency is tracked as item 2011-004-03.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: FIN Finding

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a finding of very low safety significance (Green) when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification to the facility that permitted the Unit 1 and Unit 2 "A" Auxiliary Feedwater (AF) trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee issued a Standing Order to modify the Emergency Operating Procedure which governed the use of the modification and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The issue was entered into the licensee's corrective action program as IR 1257908.

The finding was determined to be more than minor because the inspectors determined that the change required prior NRC approval. The underlying technical issue evaluated through the SDP determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems Cornerstone. Specifically, the inspectors answered "Yes" to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this was a change confirmed not to result in the loss of operability. Based upon this Phase 1 screening, the inspectors concluded that the issue was of very low safety significance (Green). This finding had a cross-cutting aspect in the Operating Experience component of the Problem Identification and Resolution (PI&R) cross-cutting area [P.2.(b)] because the licensee failed to make adequate use of known industry operating experience in the screening of a modification prior to installation. (Section 40A2.3)

The associated traditional enforcement item is tracked as item 2011-004-02.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

DESIGN OF AUXILIARY FEEDWATER SYSTEM INCLUDED VOIDS IN SAFETY RELATED ALTERNATE SUCTION FLOWPATHS

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to properly analyze the configuration of the Essential Service Water (SX) connections to the AF pumps. Specifically, a section of the piping was intentionally maintained empty (voided), but was not previously analyzed. This condition existed since initial plant construction. The issue was entered into the licensee's corrective action program as IR 1172938.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Design Control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the unverified configuration might have rendered each of the AF pumps inoperable. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase - 1 Initial Screening and Characterization of Findings," Table 4a, for the

Mitigating Systems Cornerstone. Specifically, the inspectors answered “Yes” to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this finding was confirmed not to result in a loss of operability. This conclusion was reached after reviewing tests performed by the licensee. The tests demonstrated there was reasonable assurance that the AF system would perform its safety function in the installed configuration. Additionally, the licensee filled the voided sections of pipe, restoring compliance with the licensed design basis. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not indicative of current licensee performance. (Section 40A5)

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 02, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**UNTIMELY CORRECTIVE ACTION FOR PREVIOUSLY IDENTIFIED NON-CITED VIOLATIONS
(SECTION 40a2.1.B.3.I)**

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” when licensee personnel failed to implement timely corrective actions to address two previously issued NCVs. The two NCVs were related to the lack of design analysis documentation associated with the Recycle Holdup Tank (RHUT); and tornado missile and seismic protection for the Diesel Oil Storage Tank (DOST) vent lines. Specifically, the licensee had not completed required design analyses for these issues at the conclusion of this inspection, although the violation associated with the RHUT was initially identified by NRC inspectors in June 2007 and the violation associated with the DOST vent lines was initially identified by NRC inspectors in February 2009. The licensee entered this issue into their CAP as IR 1269928 and planned to complete the required analyses by April 2012.

This finding was of more than minor significance because the issue was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 4, “Phase I Initial Screening and Characterization of Findings,” Table 4a for the Mitigating Systems Cornerstone and answered “No” to all the Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). This finding had a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area (H.2(a)) because the licensee failed to maintain long-term plant safety through minimization of long-standing equipment issues. (Section 40A2.1.b.3.i)

Inspection Report# : [2011008](#) (pdf)

Significance:  Sep 02, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO INITIATE ISSUE REPORTS

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” when licensee personnel failed to initiate IRs during the review of OPEX in accordance with licensee procedures to ensure that immediate actions, operability determinations, and reportability concerns were addressed by shift management within 24 hours. The licensee entered this issue into the CAP as IR 1257548 and completed the required shift management review.

The finding was of more than minor significance because, if left uncorrected, the issue would have the potential to lead to a more significant safety concern. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 4, “Phase I Initial Screening and Characterization of Findings,” Table 4a for the Mitigating Systems Cornerstone and answered “No” to all the Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). This finding had a cross-cutting aspect in the Operating Experience (OPEX) component of the Problem Identification and Resolution (PI&R) cross-cutting area (P.2(a)) because the licensee’s procedures and guidance for OPEX did not

ensure the systematic collection, evaluation, and communication to affected internal stakeholders, in a timely manner, of relevant internal and external OPEX. (Section 4OA2.2.c)

Inspection Report# : [2011008](#) (pdf)

Significance:  Aug 26, 2011

Identified By: NRC

Item Type: FIN Finding

Inadequate Extent of Cause for 2A EDG Lube Oil Leak

The inspector identified a finding of very low safety significance when licensee personnel failed to perform an adequate extent of cause review in the root cause evaluation for the 2A EDG lube oil cooler leak. Specifically, the root cause evaluation identified that the root cause for the White finding was the absence of a formal, structured process to ensure that EPRI documents were reviewed to capture good work practices. However, the extent of cause review performed by the licensee was narrow in scope and did not include other potentially vulnerable programs other than that which affected the EDG lube oil cooler (i.e. the leakage reduction series publications). The licensee entered this issue into their corrective action program in an effort to define an appropriate scope for a supplemental extent of cause evaluation effort.

The inspector concluded the finding was more than minor because if left uncorrected it could become a more significant safety concern. Specifically, the licensee's stated root cause of not having a formal process in place to incorporate EPRI documents from the Sealing Technology and Plant Leakage Reduction Series, which led to an inoperable EDG, could also impact other programs or processes. However, the potential impact of the identified root cause on other programs or processes were not reviewed as part of the licensee's extent of cause review effort. The inspector determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to the Mitigating Systems Cornerstone questions. Therefore, the finding screened as having very low safety significance (Green). The finding had an associated cross-cutting aspect in the Self and Independent Assessments component of the Problem Identification and Resolution cross-cutting area, because the licensee's assessment on the readiness for the NRC Supplemental Inspection failed to recognize the weakness in the extent of cause discussion (P.3(a)).

Inspection Report# : [2011016](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ENSURE THAT THE DESIGN OF THE AF SUCTION PIPING WAS ADEQUATE TO PREVENT AIR ENTRAINMENT FOLLOWING A SEISMIC OR TORNADO EVENT

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to analyze whether the design of the auxiliary feedwater system ensured that air entrained into the system following a postulated seismic or tornado event did not prevent the system from performing its safety function. Specifically, licensee personnel failed to evaluate the failure of non-seismically qualified condensate storage tank suction piping during an earthquake or tornado that would cause the operating auxiliary feedwater pumps to draw air from the break location, potentially air-binding the pumps. The licensee entered this issue into their corrective action program to determine the required changes to the design of the system and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Protection 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. The finding screened as having very low safety significance because it was a design deficiency confirmed not to result in a loss of operability or functionality. The inspectors determined that there was no cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Specify and Perform Required Independent Quality Verification Hold Point Inspections.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion X, "Inspection," for the failure to ensure that independent quality verification (QV) inspection hold points (HPs) were specified in work orders (WOs) used during Raychem splicing activities on a safety-related instrumentation cable, in the containment. Specifically, during replacement of the failed RCS Loop 1B Wide-Range, Hot-Leg (resistance temperature detector) RTD 1TE-RC023A in 2006 and in 2008, the licensee used electrical Raychem splices to connect the RTD leads to its cable without including the required QV inspection HPs in the associated WO instructions. Consequently, the QV independent inspections were not performed as required by Exelon corporate Nuclear Oversight (NO) and Maintenance procedures and by the Quality Assurance Topical Report (QATR). Subsequently, the licensee initiated corrective actions to rework the Raychem splice at the next window of opportunity and to communicate and reinforce the importance of inclusion of QV HP inspections, when required. This issue was entered into the licensee's corrective action program (CAP) under Issue Reports (IRs) 01226961, 01214766, 01217502 and 01218406.

The failure to ensure that independent QV HP inspections were included in WO instructions as required by Exelon Corporate procedures and the QATR was a performance deficiency. This performance deficiency was more than minor because, if left uncorrected, it would lead to a more significant safety concern in that the failure to independently verify quality attributes in safety-related equipment could involve an adverse impact to plant equipment. The inspectors concluded that this finding was associated with the Mitigating Systems Cornerstone. This performance deficiency was determined to have very low safety significance in Phase I of the SDP, since it was confirmed to involve a lack of required QV HPs for this Raychem splicing activity that did not result in a loss of operability or functionality. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because the licensee did not have an effective systematic process for obtaining interdisciplinary reviews of proposed maintenance work instructions to determine whether independent QV HP inspections were appropriately specified and implemented to assure plant safety. [H.1(a)] (Section 1R17.2.b)
Inspection Report# : [2011009](#) (pdf)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Procedure Requirements for Temporary Scaffolds that Remain in Place for Over 90 Days.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," related to inadequate control of installed temporary scaffolds. Specifically, licensee's procedure for the installation, modification, and removal of scaffolds was not followed, on a routine basis, for temporary scaffolds that remained in the plant for greater than 90 days. This could impact the operability or availability of plant system. The licensee entered this issue into the CAP as IR 01212656. Corrective actions for this issue included an investigation as to why procedure adherence issues with regard to scaffolds continue to occur and an extent of condition review of similar plant programs.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix E, "Examples of Minor Issues." Specifically, the inspectors concluded that this issue was similar to the more than minor criteria established in Example 4.a, "Insignificant Procedural Errors," since the licensee failed to perform the required engineering evaluation for the temporary installed scaffolding that remained in the plant for more than 90 days. Therefore, this performance deficiency also impacted the Mitigating Systems Cornerstone objective of protection against external events (seismic events). The finding was of very low safety significance because there was not a confirmed loss of operability of any mitigating system component. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision-Making, because the licensee did not make the appropriate safety or risk significant decisions by failing to utilize the systematic scaffolding construction process to ensure adequate quality and, therefore, adequate safety was maintained when scaffolds remained installed for greater than 90 days. [H.1(a)]. (Section 4OA2.b.(1))

Inspection Report# : [2011009](#) (pdf)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

EDG Usable Fuel Calculations Failed to Consider Appropriate EDG Frequency Variations.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to correctly translate applicable design basis (calculations) into specifications. Specifically, the licensee failed to take into account fuel oil consumption at an increased frequency of 61.2 Hz in their EDG loading calculations which resulted in non-conservative Technical Specifications. The licensee entered this finding into their corrective action program as IR 01226844 and implemented actions to evaluate incorporation of the EDG frequency administrative limits into applicable site operating procedures to ensure an adequate supply of fuel was available.

The inspectors determined that this finding was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to account for the increased fuel oil consumption resulting from operation at a higher EDG frequency variation of 61.2 Hz as allowed by TS 3.8.1 and room temperature of up to 120°F in their EDG loading calculations. Therefore, the licensee did not ensure that the minimum fuel oil level in the storage tanks, as required per TS 3.8.3, was adequate to support the EDGs' 7-day mission time. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution Corrective Action Program because the licensee did not thoroughly evaluate the EDG fuel oil consumption when considering EDG frequency variation. Specifically, the licensee failed to translate applicable design bases into specifications, which resulted in non-conservative TS. [P.1(c)] (Section 40A2.b.(2))

Inspection Report# : [2011009](#) (pdf)

Significance:  May 04, 2011

Identified By: NRC

Item Type: FIN Finding

Failure to Adequately Document and Justify Continued Operability of the Auxiliary Feedwater System.

A finding of very low safety significance was identified at the Braidwood and Byron Stations by the inspectors when licensee personnel failed to adequately document and justify continued operability of the auxiliary feedwater (AF) system. Specifically, licensee evaluations of known voids in the AF alternate source suction piping did not provide an adequate technical basis to support operability of the AF pumps during a suction swap-over scenario. Subsequently, the licensee filled the voids and a Root Cause Evaluation (RCE) was initiated under Issue Report (IR) 1194196 (Braidwood) and IR 1194324 (Byron). The RCE was initiated to determine why prior opportunities for discovery of the inadequate void acceptance basis were missed and to develop associated corrective actions.

The inspectors determined the finding was more than minor because, if left uncorrected, the failure to recognize conditions that could render equipment inoperable had the potential to lead to a more significant safety concern. Because the finding was not a design deficiency, did not result in a loss of safety function, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event, the inspectors concluded that the finding was of very low safety significance (Green). This finding was associated with a cross-cutting aspect in the Decision-Making component of the Human Performance cross-cutting area because the licensee did not use conservative assumptions and did not verify the validity of underlying assumptions in their evaluations of the AF suction piping voids. (H.1(b)) (Section 40A5.1.7.b)

Inspection Report# : [2011015](#) (pdf)

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE INSTRUCTIONS FOR MEASURING ECCS VOIDS

An NRC-identified finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors when licensee personnel failed to establish instructions for measuring pipe voids detected during surveillances of the emergency core cooling systems for gas accumulation. Specifically, instructions to measure the size of gas voids detected during venting at each safety injection and residual heat removal system vent location were not provided so that the effect of the void on system

operability could be evaluated. The licensee entered this issue into their corrective action program and initiated procedure revisions to provide additional guidance for recording data to size voids identified during venting operations.

The performance deficiency was determined to be more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The finding screened as having very low safety significance because it did not result in a loss of operability or functionality. Specifically, a qualitative assessment of the voids detected by venting since the implementation of the licensee's resolution of Generic Letter 2008 01 established reasonable assurance that these voids did not result in a loss of operability. The inspectors did not identify a cross-cutting aspect that represented the underlying cause of this performance deficiency. Therefore, no cross-cutting aspect was assigned to this finding.

Inspection Report# : [2011002](#) (*pdf*)

Significance: **W** Feb 07, 2011

Identified By: NRC

Item Type: VIO Violation

Self-Revealing Failure of the 2A Diesel Generator Upper Lube Oil Cooler

A finding of low to moderate safety significance (White) and a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the 2A Diesel Generator (D/G) was required to be shutdown during routine monthly surveillance testing on November 17, 2010, when a flange connection on a spool piece connected to the upper lube oil cooler failed, resulting in a significant oil leak. The cause of the failure was that Work Order 1206254, "Clean Tube Side of Lube Oil Coolers," did not contain appropriate acceptance criteria to ensure proper reassembly of the spool piece for the upper lube oil cooler following maintenance on January 17, 2010. Specifically, the work order package did not contain a final torque verification to ensure that the spool piece flange bolts were torqued to required values, which resulted in the leak. The licensee entered this issue into the correction action program as Issue Report (IR) 1141591, properly re-installed the spool piece, and returned the 2A D/G to service on November 21, 2010.

The inspectors determined that this finding was more than minor, because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone and impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. The NRC assessed this finding through a Phase 3 Risk Evaluation of the Significance Determination Process and made a preliminary determination that it was an issue of low to moderate safety significance (White). The cause of this finding was related to the Work Practices component of the Human Performance cross-cutting area since licensee personnel proceeded in the face of uncertainty or unexpected circumstances during the upper lube oil cooler maintenance activity (H.4(a)). (Section 1R12)

Final Significance Determination issued in report 2011-012 on March 14, 2011.

Inspection Report# : [2011016](#) (*pdf*)

Inspection Report# : [2011012](#) (*pdf*)

Inspection Report# : [2011011](#) (*pdf*)

Significance: **G** Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Instructions for the Inspection of the River Screen House and Essential Service Water Cooling Tower

A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors when licensee personnel failed to establish specific instructions for inspecting the River Screen House and Essential Service Water Cooling Tower. Specifically, the procedure that provided guidance for inspecting these structures lacked specific instructions on how to detect concrete degradation, erosion, corrosion and biological fouling. The licensee entered this issue into their corrective action program and initiated procedure revisions to provide further direction for identifying and documenting the degradation of these structures and related components.

The performance deficiency was determined to be more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The finding screened as of very low safety significance because it was a qualification deficiency confirmed not to result in a loss of operability or functionality. Specifically, a qualitative assessment of historic surveillance reports found the documented results acceptable. The inspectors determined that this finding did not represent current licensee performance and therefore no cross-cutting aspect was assigned. (Section 1R07.1)

Inspection Report# : [2010005](#) (*pdf*)

Significance:  Dec 03, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Adequate Guidance in Safe-Shutdown Procedures

A finding of very low safety-significance and associated NCV of Technical Specification 5.4.1.c for Units 1 and 2 was identified by the inspectors for the licensee's failure to provide adequate guidance in safe shutdown procedures. Specifically, the licensee failed to provide adequate guidance to reenergize the 4 kiloVolt (kV) buses, which were required to power safe shutdown components to achieve hot shutdown in the event of a fire in Fire Zone 11.3-0. The licensee subsequently entered the issue into their corrective action program and initiated actions, which included recommendations to revise safe shutdown procedures to provide guidance for recovery actions to reenergize the required affected busses.

The inspectors determined that this finding was more than minor because the failure to provide adequate procedural guidance to reenergize the 4 kV buses could have potentially compromised the ability to safely shutdown the plant in the event of a fire in Fire Zone 11.3-0. This finding was of very low safety significance (Green) based on a Phase III significance determination analysis. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R05.1R05.6.b(1))

Inspection Report# : [2010006](#) (*pdf*)

Significance:  Dec 03, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Periodically Test 125 Vdc Molded Case Circuit Breakers

. A finding of very low safety significance and associated NCV of the Byron Station facility operating licensee conditions for fire protection was identified by the inspectors for the licensee's failure to periodically test samples of molded case circuit breakers (MCCBs) at the 125 Volt direct current (Vdc) level. The licensee subsequently entered the issue into their corrective action program and verified that sufficient design margin existed such that breaker coordination would not be adversely affected.

The inspectors determined that this finding was more than minor because the failure to test the MCCBs would result in a failure to detect excessive set-point drift which impacted breaker coordination. This finding was of very low safety significance (Green) because the licensee verified that sufficient design margin existed such that breaker coordination would not be adversely affected. In addition, no failures of 125 Vdc MCCBs to trip due to set-point drift had been identified. The finding did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R05.1R05.6.b(2))

Inspection Report# : [2010006](#) (*pdf*)

Barrier Integrity

Significance:  Mar 31, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

SELF-REVEALED LOW FLOW TO REACTOR CONTAINMENT FAN COOLER

A self-revealed finding of very low safety significance was identified on January 21, 2011, when licensee personnel

failed to ensure that surveillance procedures for measuring essential service water flow through reactor containment fan coolers was adequate. As a result, during routine surveillance testing, measured essential service water flow through the reactor containment fan coolers was less than technical specification requirements.

The inspectors concluded that the finding was more than minor because it was associated with the Configuration Control attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical barriers, including the containment, protect the public from radionuclide releases caused by accidents and events. Specifically, the finding was determined to adversely impact the required technical specification required flow rate of essential service water through the reactor containment fan coolers. The inspectors evaluated the finding using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and based on a "No" answer to all of the questions in the Barrier Integrity column of Table 4a, determined the finding to be of very low safety significance. This finding had a cross-cutting aspect in the area of Human Performance, Resources (H.2(c)) because the licensee had repeatedly modified the surveillance procedure without ensuring adequate operational margin to the technical specification limit. The licensee entered this issue into the corrective action program and initiated actions to revise the surveillance procedure to raise the as-left essential service water system flow rate.

Inspection Report# : [2011002](#) (*pdf*)

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE THE EFFECTS OF DYNAMIC LOADS AT THE CS DISCHARGE PIPING

An NRC-identified finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors when licensee personnel failed to evaluate the effects of dynamic loads at the containment spray discharge piping. The inspectors were concerned because portions of the containment spray discharge piping were normally voided by design and neither the structural design nor operation of the system addressed the dynamic loads that would result when the voided piping was rapidly filled following system initiation. The licensee entered this issue into the corrective action program and, at the time of the inspection, planned to include an evaluation of dynamic loads into the design basis of containment spray.

The performance deficiency was determined to be more than minor because it was associated with the Structures, Systems, Components, and Barrier Performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as having very low safety significance because it did not affect either core damage frequency or large early release frequency. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, because the licensee did not thoroughly evaluate external operating experience.

Inspection Report# : [2011002](#) (*pdf*)

Emergency Preparedness

Significance: SL-IV Jun 22, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval

The inspector identified a violation of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54(q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner. The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this

issue into its corrective action program and revised the EAL basis to restore compliance. (Section 1EP4)

The related performance deficiency is tracked as item 200-502-02.

Inspection Report# : [2010502](#) (*pdf*)

Significance:  Jun 22, 2011

Identified By: NRC

Item Type: FIN Finding

Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval

The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding. (Section 1EP4)

The associated traditional enforcement item is tracked as item 2011-50X-01.

Inspection Report# : [2010502](#) (*pdf*)

Occupational Radiation Safety

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

OUT-OF-DATE/EXPIRED RESPIRATOR CARTRIDGES

An NRC-identified finding of very low safety significance and an associated NCV of TS 5.4.1 was identified by the inspectors when out of date respirator cartridges were found available for use. Radiation protection procedures that cover respiratory protection program did not require cartridges to be replaced after the manufacturer specified shelf-life had expired. The manufacturer of the respirator canister recognized that it was possible that chemical cartridges, which were more than a year old, might lose some of their efficiency in their ability to absorb contaminants. The manufacturer prescribed an expiration date of 3 years from the date of the canister manufacture and this date was stamped on to the canister label.

The regulatory authority for respiratory protection is the Occupational Safety and Health Administration (OSHA). The regulations are defined in 29 CFR 1910.134 titled "Respiratory Protection." Title 29 CFR 1910.134(d)(3)(iii) provides requirements for the protection against gases and vapors. These requirements include that air purifying respirators be equipped with an End-of-Service Life Indicator (ESLI) or the employer implements a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. The employer shall describe in the respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.

The inspectors reviewed the guidance in IMC 0612, Appendix E, Examples of Minor Issues, but did not identify any

examples similar to the performance deficiency. However, in accordance with IMC 0612, the inspectors determined that the finding was more than minor because if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, cartridges that were beyond the recommended shelf-life could lose some of their efficiency in their ability to absorb contaminants and result in additional radiation doses to the users. The finding was assessed using the Occupational Radiation SDP and was determined to be of very low safety significance because these problems were not as-low-as-is-reasonably-achievable (ALARA) planning issues, there were no overexposures, nor substantial potential for overexposures and the licensee's ability to assess dose was not compromised. Corrective actions planned by the licensee included replacing the expired cartridges and adding guidance to procedures for checking expiration dates during routine inventories. The inspectors determined that the cause of this incident involved a cross-cutting component in the human performance area for inadequate resources. Specifically, the licensee did not have complete, accurate and up-to-date procedures.

Inspection Report# : [2011002](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Significance: SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedures for Implementing FSAR Required Annulus Cooling (Section 40A5.2.b.1)

The inspectors identified a Severity Level IV NCV of very low safety significance of 10 CFR 72.150, "Instruction, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that the design basis peak fuel cladding limit would not be exceeded during canister loading operations. The licensee entered this issue into their corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance using IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," Example 2c, in that the procedures failed to incorporate thermal acceptance criteria established by the Holtec Final Safety Analysis Report and that the failure to incorporate thermal acceptance criteria was repetitive. Although the violation contributed to the likelihood of peak fuel cladding temperatures exceeding the safety limit, subsequent analysis by the licensee determined that fuel cladding temperature limits were not exceeded. The violation screened as having very low safety significance. (Section 40A5.2)

Inspection Report# : [2010005](#) (*pdf*)

Significance: SL-IV Dec 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedural Guidance for Heavy Loads Operations (Section 40A5.2.b.2)

The inspectors identified a Severity Level IV NCV of very low safety significance of 10 CFR 72.150, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to have procedures in place to ensure that heavy loads were operated safely in the Fuel Handling Building. The licensee entered this issue into their corrective action program and revised the procedure to provide monitoring criteria.

The violation was determined to be of more than minor significance because if left uncorrected, it could lead to a more significant safety concern. Consistent with the guidance in Section 2.6.D of the NRC Enforcement Manual, if a violation does not fit an example in the Enforcement Policy Violation Examples, it should be assigned a severity level: (1) commensurate with its safety significance; and (2) informed by similar violations addressed in the Violation Examples. The violation screened as having very low safety significance. (Section 4OA5.2)

Inspection Report# : [2010005](#) (*pdf*)

Last modified : January 04, 2012

Byron 2

4Q/2011 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY VOIDED SECTIONS OF AF PIPING

The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," when licensee personnel failed to identify non-conforming conditions associated with voided piping within the Unit 1 and Unit 2 safety-related diesel driven auxiliary feedwater (AF) systems (i.e., between the AF 006B and 017B valves.) These sections of piping had been historically voided until they were recently re-design to be filled and maintained filled with water to address a NRC identified 10 CFR Part 50, Appendix B, Criterion III, "Design Control" Green non-cited violation (NCV). The licensee entered this issue into their corrective action program as IR 1296819, IR 1292337, and IR 1295760. Corrective actions include instituting a Operations standing order, replacement of the Unit 1 AF drain valve, and a capping the Unit 2 AF drain valve.

The inspectors determined that the failure to identify the voided sections of AF piping prior to and following the inspector's observations and interactions with licensee staff and management was a performance deficiency. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 Initial Screening and Characterization of findings," Table 4a for the Mitigation Systems cornerstone. Specifically, the inspectors answered yes to question 1; design or qualification deficiency confirmed not to result in a loss of operability or functionality. This conclusion was reached after conservatively assuming that both sections of piping were completely voided and after reviewing tests performed by the licensee in response to the previously documented design control violation. This finding was associated with a cross-cutting aspect in the Human Performance, Resources component H.2(c). Specifically, the licensee did not have adequate procedures to ensure that these sections of piping were maintained filled with water. (Section 1R15)

Inspection Report# : [2011005](#) (*pdf*)

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

HIGH ENERGY LINE BREAK OPEERABILITY EVALUATION

The inspectors identified that the licensee did not meet multiple Operability Determination Process standards after identifying a non-conservative condition related to assumed closure times for hazard barrier dampers separating the turbine building from various safety-related rooms within the Auxiliary Building. The wall between these two building that house the dampers are commonly referred to as the "L-wall." The issues raised by the inspectors during their review of the Operability Evaluation (Revision 1 and Revision 2) resulted in the station: re-evaluating the non-conservative condition against aspects of the current licensing basis not previously considered, including applicable affected extent of condition room areas, and evaluating multiple common mode failures that the station had not previously considered under this review. In addition to the issues with the Operability Evaluation, the inspectors identified that applicable station calculations of record did not assume the correct licensing basis single failure. The licensee entered these issues into the their Corrective Action Program as IR 1184258, IR 1237133, IR 1238611, IR 1240295, IR 1244251, and IR 1276895. Corrective actions included two revisions of the Operability Evaluation, an

assignment to reconstitute the applicable design basis calculation records, and plans to re-design “L-wall” HELB ventilation barriers to restore compliance.

This performance deficiency was determined to be more than minor because it was similar to the “not minor if” aspect of NRC Manual Chapter 0612, Appendix E, “Example of Minor Issues” example “3j” and dissimilar from the “minor because” aspect of this example to reasonably conclude that the finding was associated with the Mitigating Systems Design Control attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” Table 4a, for the Mitigating Systems Cornerstone. The inspectors answered “No” to all of the Mitigating Systems Cornerstone questions in Table 4a of IMC 0609.04, and, as a result, the finding screened as having very low safety significance (Green). This finding has a cross-cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area [P.1(c)] since the licensee failed to adequately evaluate a non-conforming condition associated with hazard barrier closure times. As a result, the licensee would not have implemented effective corrective actions to resolve the non-conformance. (Section 1R15)

Inspection Report# : [2011005](#) (*pdf*)

Significance: G Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY ELEVATED RISK STATUS

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear power Plants,” when licensee personnel failed to accurately assess plant risk during maintenance activities. The inspectors determined that the licensee failed to identify and take actions required to address an increase in risk when the Unit 2 Component Cooling Water (CC) heat exchanger was removed from service. Specifically, for 0.6 days the Unit 2 CC heat exchanger was removed from service and the plant remained in a Green risk status although the licensee's maintenance risk management procedure prescribed that a Yellow risk status be entered and that certain Risk Management Actions (RMAs) be taken. Upon identification and notification by the NRC inspectors, licensee personnel revised the plant risk status from Green to Yellow and took the appropriate RMAs. The issue was entered into the licensee’s corrective action program as Issue Report (IR) 1262639.

The performance deficiency was determined to be more than minor because it was associated with the Human Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The performance deficiency was also determined to be more than minor because the finding was similar to IMC 0609, Appendix E, Example 7.e, and resulted in actual plant risk being in a higher risk category established by the licensee than had been previously declared. The Byron Standardized Plant Analysis Risk (SPAR) model Version 8.18 and SAPHIRE model Version 8.0.7.17 was used to calculate an Incremental Core Damage Probability Deficit (ICDPD) for the condition of the Unit 2 CC heat exchanger being unavailable for 0.6 days. The result was an ICDPD of less than $5E-7$. Based on the analysis, the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect in the Work Control component of the Human Performance cross-cutting area [H.3.(a)] because the licensee failed to appropriately incorporate risk insights when the Unit 2 CC heat exchanger was removed from service. (Section 1R13)

Inspection Report# : [2011004](#) (*pdf*)

Significance: SL-IV Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a Severity Level IV NCV of 10 CFR 50.59, “Changes, Tests, and Experiments,” when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification to the facility that permitted the Unit 1 and Unit 2 “A” Auxiliary

Feedwater (AF) trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee issued a Standing Order to modify the Emergency Operating Procedure which governed the use of the modification and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The issue was entered into the licensee's corrective action program as IR 1257908.

The violation was determined to be more than minor because the inspectors determined that the change required prior NRC approval. Violations of 10 CFR 50.59 are dispositioned using the traditional enforcement process because they are considered to be violations that potentially impede or impact the regulatory process. In accordance with Section 6.1.d.2 of the NRC Enforcement Policy, this violation is categorized as Severity Level IV because the resulting changes were evaluated by the SDP as having very low safety significance. (Section 40A2.3)

The associated performance deficiency is tracked as item 2011-004-03.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: FIN Finding

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a finding of very low safety significance (Green) when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification to the facility that permitted the Unit 1 and Unit 2 "A" Auxiliary Feedwater (AF) trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee issued a Standing Order to modify the Emergency Operating Procedure which governed the use of the modification and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The issue was entered into the licensee's corrective action program as IR 1257908.

The finding was determined to be more than minor because the inspectors determined that the change required prior NRC approval. The underlying technical issue evaluated through the SDP determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems Cornerstone. Specifically, the inspectors answered "Yes" to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this was a change confirmed not to result in the loss of operability. Based upon this Phase 1 screening, the inspectors concluded that the issue was of very low safety significance (Green). This finding had a cross-cutting aspect in the Operating Experience component of the Problem Identification and Resolution (PI&R) cross-cutting area [P.2.(b)] because the licensee failed to make adequate use of known industry operating experience in the screening of a modification prior to installation. (Section 40A2.3)

The associated traditional enforcement item is tracked as item 2011-004-02.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

DESIGN OF AUXILIARY FEEDWATER SYSTEM INCLUDED VOIDS IN SAFETY RELATED ALTERNATE SUCTION FLOWPATHS

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to properly analyze the configuration of the Essential Service Water (SX) connections to the AF pumps. Specifically, a section of the piping was intentionally maintained empty (voided), but was not previously analyzed. This condition existed since initial plant construction. The issue was entered into the licensee's corrective action program as IR 1172938.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems

Cornerstone attribute of Design Control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the unverified configuration might have rendered each of the AF pumps inoperable. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase - 1 Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems Cornerstone. Specifically, the inspectors answered "Yes" to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this finding was confirmed not to result in a loss of operability. This conclusion was reached after reviewing tests performed by the licensee. The tests demonstrated there was reasonable assurance that the AF system would perform its safety function in the installed configuration. Additionally, the licensee filled the voided sections of pipe, restoring compliance with the licensed design basis. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not indicative of current licensee performance. (Section 40A5)

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 02, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

UNTIMELY CORRECTIVE ACTION FOR PREVIOUSLY IDENTIFIED NON-CITED VIOLATIONS (SECTION 40a2.1.B.3.I)

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," when licensee personnel failed to implement timely corrective actions to address two previously issued NCVs. The two NCVs were related to the lack of design analysis documentation associated with the Recycle Holdup Tank (RHUT); and tornado missile and seismic protection for the Diesel Oil Storage Tank (DOST) vent lines. Specifically, the licensee had not completed required design analyses for these issues at the conclusion of this inspection, although the violation associated with the RHUT was initially identified by NRC inspectors in June 2007 and the violation associated with the DOST vent lines was initially identified by NRC inspectors in February 2009. The licensee entered this issue into their CAP as IR 1269928 and planned to complete the required analyses by April 2012.

This finding was of more than minor significance because the issue was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to all the Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). This finding had a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area (H.2(a)) because the licensee failed to maintain long-term plant safety through minimization of long-standing equipment issues. (Section 40A2.1.b.3.i)

Inspection Report# : [2011008](#) (pdf)

Significance:  Sep 02, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO INITIATE ISSUE REPORTS

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when licensee personnel failed to initiate IRs during the review of OPEX in accordance with licensee procedures to ensure that immediate actions, operability determinations, and reportability concerns were addressed by shift management within 24 hours. The licensee entered this issue into the CAP as IR 1257548 and completed the required shift management review.

The finding was of more than minor significance because, if left uncorrected, the issue would have the potential to lead to a more significant safety concern. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and

Characterization of Findings,” Table 4a for the Mitigating Systems Cornerstone and answered “No” to all the Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). This finding had a cross-cutting aspect in the Operating Experience (OPEX) component of the Problem Identification and Resolution (PI&R) cross-cutting area (P.2(a)) because the licensee’s procedures and guidance for OPEX did not ensure the systematic collection, evaluation, and communication to affected internal stakeholders, in a timely manner, of relevant internal and external OPEX. (Section 40A2.2.c)

Inspection Report# : [2011008](#) (pdf)

Significance:  Aug 26, 2011

Identified By: NRC

Item Type: FIN Finding

Inadequate Extent of Cause for 2A EDG Lube Oil Leak

The inspector identified a finding of very low safety significance when licensee personnel failed to perform an adequate extent of cause review in the root cause evaluation for the 2A EDG lube oil cooler leak. Specifically, the root cause evaluation identified that the root cause for the White finding was the absence of a formal, structured process to ensure that EPRI documents were reviewed to capture good work practices. However, the extent of cause review performed by the licensee was narrow in scope and did not include other potentially vulnerable programs other than that which affected the EDG lube oil cooler (i.e. the leakage reduction series publications). The licensee entered this issue into their corrective action program in an effort to define an appropriate scope for a supplemental extent of cause evaluation effort.

The inspector concluded the finding was more than minor because if left uncorrected it could become a more significant safety concern. Specifically, the licensee’s stated root cause of not having a formal process in place to incorporate EPRI documents from the Sealing Technology and Plant Leakage Reduction Series, which led to an inoperable EDG, could also impact other programs or processes. However, the potential impact of the identified root cause on other programs or processes were not reviewed as part of the licensee’s extent of cause review effort. The inspector determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 4, “Phase I Initial Screening and Characterization of Findings,” Table 4a for the Mitigating Systems Cornerstone and answered “No” to the Mitigating Systems Cornerstone questions. Therefore, the finding screened as having very low safety significance (Green). The finding had an associated cross-cutting aspect in the Self and Independent Assessments component of the Problem Identification and Resolution cross-cutting area, because the licensee’s assessment on the readiness for the NRC Supplemental Inspection failed to recognize the weakness in the extent of cause discussion (P.3(a)).

Inspection Report# : [2011016](#) (pdf)

Significance:  Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ENSURE THAT THE DESIGN OF THE AF SUCTION PIPING WAS ADEQUATE TO PREVENT AIR ENTRAINMENT FOLLOWING A SEISMIC OR TORNADO EVENT

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” when licensee personnel failed to analyze whether the design of the auxiliary feedwater system ensured that air entrained into the system following a postulated seismic or tornado event did not prevent the system from performing its safety function. Specifically, licensee personnel failed to evaluate the failure of non-seismically qualified condensate storage tank suction piping during an earthquake or tornado that would cause the operating auxiliary feedwater pumps to draw air from the break location, potentially air-binding the pumps. The licensee entered this issue into their corrective action program to determine the required changes to the design of the system and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Protection 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. The finding screened as having very low safety significance because it was a design deficiency confirmed not to result in a loss of operability or functionality. The inspectors determined that there was no cross-cutting aspect associated with this

finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.
Inspection Report# : [2011003](#) (*pdf*)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Specify and Perform Required Independent Quality Verification Hold Point Inspections.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion X, "Inspection," for the failure to ensure that independent quality verification (QV) inspection hold points (HPs) were specified in work orders (WOs) used during Raychem splicing activities on a safety-related instrumentation cable, in the containment. Specifically, during replacement of the failed RCS Loop 1B Wide-Range, Hot-Leg (resistance temperature detector) RTD 1TE-RC023A in 2006 and in 2008, the licensee used electrical Raychem splices to connect the RTD leads to its cable without including the required QV inspection HPs in the associated WO instructions. Consequently, the QV independent inspections were not performed as required by Exelon corporate Nuclear Oversight (NO) and Maintenance procedures and by the Quality Assurance Topical Report (QATR). Subsequently, the licensee initiated corrective actions to rework the Raychem splice at the next window of opportunity and to communicate and reinforce the importance of inclusion of QV HP inspections, when required. This issue was entered into the licensee's corrective action program (CAP) under Issue Reports (IRs) 01226961, 01214766, 01217502 and 01218406.

The failure to ensure that independent QV HP inspections were included in WO instructions as required by Exelon Corporate procedures and the QATR was a performance deficiency. This performance deficiency was more than minor because, if left uncorrected, it would lead to a more significant safety concern in that the failure to independently verify quality attributes in safety-related equipment could involve an adverse impact to plant equipment. The inspectors concluded that this finding was associated with the Mitigating Systems Cornerstone. This performance deficiency was determined to have very low safety significance in Phase I of the SDP, since it was confirmed to involve a lack of required QV HPs for this Raychem splicing activity that did not result in a loss of operability or functionality. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because the licensee did not have an effective systematic process for obtaining interdisciplinary reviews of proposed maintenance work instructions to determine whether independent QV HP inspections were appropriately specified and implemented to assure plant safety. [H.1(a)] (Section 1R17.2.b)
Inspection Report# : [2011009](#) (*pdf*)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Procedure Requirements for Temporary Scaffolds that Remain in Place for Over 90 Days.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," related to inadequate control of installed temporary scaffolds. Specifically, licensee's procedure for the installation, modification, and removal of scaffolds was not followed, on a routine basis, for temporary scaffolds that remained in the plant for greater than 90 days. This could impact the operability or availability of plant system. The licensee entered this issue into the CAP as IR 01212656. Corrective actions for this issue included an investigation as to why procedure adherence issues with regard to scaffolds continue to occur and an extent of condition review of similar plant programs.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix E, "Examples of Minor Issues." Specifically, the inspectors concluded that this issue was similar to the more than minor criteria established in Example 4.a, "Insignificant Procedural Errors," since the licensee failed to perform the required engineering evaluation for the temporary installed scaffolding that remained in the plant for more than 90 days. Therefore, this performance deficiency also impacted the Mitigating Systems Cornerstone objective of protection against external events (seismic events). The finding was of very low safety significance because there was not a confirmed loss of operability of any mitigating system component. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision-Making, because the licensee did not make the appropriate safety or risk significant decisions by failing to utilize the systematic scaffolding construction process to ensure adequate quality and, therefore, adequate safety was maintained when scaffolds remained installed

for greater than 90 days. [H.1(a)]. (Section 40A2.b.(1))

Inspection Report# : [2011009](#) (pdf)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

EDG Usable Fuel Calculations Failed to Consider Appropriate EDG Frequency Variations.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to correctly translate applicable design basis (calculations) into specifications. Specifically, the licensee failed to take into account fuel oil consumption at an increased frequency of 61.2 Hz in their EDG loading calculations which resulted in non-conservative Technical Specifications. The licensee entered this finding into their corrective action program as IR 01226844 and implemented actions to evaluate incorporation of the EDG frequency administrative limits into applicable site operating procedures to ensure an adequate supply of fuel was available.

The inspectors determined that this finding was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to account for the increased fuel oil consumption resulting from operation at a higher EDG frequency variation of 61.2 Hz as allowed by TS 3.8.1 and room temperature of up to 120°F in their EDG loading calculations. Therefore, the licensee did not ensure that the minimum fuel oil level in the storage tanks, as required per TS 3.8.3, was adequate to support the EDGs' 7-day mission time. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution Corrective Action Program because the licensee did not thoroughly evaluate the EDG fuel oil consumption when considering EDG frequency variation. Specifically, the licensee failed to translate applicable design bases into specifications, which resulted in non-conservative TS. [P.1(c)] (Section 40A2.b.(2))

Inspection Report# : [2011009](#) (pdf)

Significance:  May 04, 2011

Identified By: NRC

Item Type: FIN Finding

Failure to Adequately Document and Justify Continued Operability of the Auxiliary Feedwater System.

A finding of very low safety significance was identified at the Braidwood and Byron Stations by the inspectors when licensee personnel failed to adequately document and justify continued operability of the auxiliary feedwater (AF) system. Specifically, licensee evaluations of known voids in the AF alternate source suction piping did not provide an adequate technical basis to support operability of the AF pumps during a suction swap-over scenario. Subsequently, the licensee filled the voids and a Root Cause Evaluation (RCE) was initiated under Issue Report (IR) 1194196 (Braidwood) and IR 1194324 (Byron). The RCE was initiated to determine why prior opportunities for discovery of the inadequate void acceptance basis were missed and to develop associated corrective actions.

The inspectors determined the finding was more than minor because, if left uncorrected, the failure to recognize conditions that could render equipment inoperable had the potential to lead to a more significant safety concern. Because the finding was not a design deficiency, did not result in a loss of safety function, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event, the inspectors concluded that the finding was of very low safety significance (Green). This finding was associated with a cross-cutting aspect in the Decision-Making component of the Human Performance cross-cutting area because the licensee did not use conservative assumptions and did not verify the validity of underlying assumptions in their evaluations of the AF suction piping voids. (H.1(b)) (Section 40A5.1.7.b)

Inspection Report# : [2011015](#) (pdf)

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE INSTRUCTIONS FOR MEASURING ECCS VOIDS

An NRC-identified finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors when licensee personnel failed to establish instructions for measuring pipe voids detected during surveillances of the emergency core cooling systems for gas accumulation. Specifically, instructions to measure the size of gas voids detected during venting at each safety injection and residual heat removal system vent location were not provided so that the effect of the void on system operability could be evaluated. The licensee entered this issue into their corrective action program and initiated procedure revisions to provide additional guidance for recording data to size voids identified during venting operations.

The performance deficiency was determined to be more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. The finding screened as having very low safety significance because it did not result in a loss of operability or functionality. Specifically, a qualitative assessment of the voids detected by venting since the implementation of the licensee's resolution of Generic Letter 2008 01 established reasonable assurance that these voids did not result in a loss of operability. The inspectors did not identify a cross-cutting aspect that represented the underlying cause of this performance deficiency. Therefore, no cross-cutting aspect was assigned to this finding.

Inspection Report# : [2011002](#) (*pdf*)

Significance: **W** Feb 07, 2011

Identified By: NRC

Item Type: VIO Violation

Self-Revealing Failure of the 2A Diesel Generator Upper Lube Oil Cooler

A finding of low to moderate safety significance (White) and a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the 2A Diesel Generator (D/G) was required to be shutdown during routine monthly surveillance testing on November 17, 2010, when a flange connection on a spool piece connected to the upper lube oil cooler failed, resulting in a significant oil leak. The cause of the failure was that Work Order 1206254, "Clean Tube Side of Lube Oil Coolers," did not contain appropriate acceptance criteria to ensure proper reassembly of the spool piece for the upper lube oil cooler following maintenance on January 17, 2010. Specifically, the work order package did not contain a final torque verification to ensure that the spool piece flange bolts were torqued to required values, which resulted in the leak. The licensee entered this issue into the correction action program as Issue Report (IR) 1141591, properly re-installed the spool piece, and returned the 2A D/G to service on November 21, 2010.

The inspectors determined that this finding was more than minor, because it was associated with the Human Performance attribute of the Mitigating Systems cornerstone and impacted the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. The NRC assessed this finding through a Phase 3 Risk Evaluation of the Significance Determination Process and made a preliminary determination that it was an issue of low to moderate safety significance (White). The cause of this finding was related to the Work Practices component of the Human Performance cross-cutting area since licensee personnel proceeded in the face of uncertainty or unexpected circumstances during the upper lube oil cooler maintenance activity (H.4(a)). (Section 1R12)

Final Significance Determination issued in report 2011-012 on March 14, 2011.

Inspection Report# : [2011016](#) (*pdf*)

Inspection Report# : [2011011](#) (*pdf*)

Inspection Report# : [2011012](#) (*pdf*)

Barrier Integrity

Significance: **G** Mar 31, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

SELF-REVEALED LOW FLOW TO REACTOR CONTAINMENT FAN COOLER

A self-revealed finding of very low safety significance was identified on January 21, 2011, when licensee personnel failed to ensure that surveillance procedures for measuring essential service water flow through reactor containment fan coolers was adequate. As a result, during routine surveillance testing, measured essential service water flow through the reactor containment fan coolers was less than technical specification requirements.

The inspectors concluded that the finding was more than minor because it was associated with the Configuration Control attribute of the Barrier Integrity Cornerstone and affected the cornerstone objective of providing reasonable assurance that physical barriers, including the containment, protect the public from radionuclide releases caused by accidents and events. Specifically, the finding was determined to adversely impact the required technical specification required flow rate of essential service water through the reactor containment fan coolers. The inspectors evaluated the finding using IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and based on a "No" answer to all of the questions in the Barrier Integrity column of Table 4a, determined the finding to be of very low safety significance. This finding had a cross-cutting aspect in the area of Human Performance, Resources (H.2(c)) because the licensee had repeatedly modified the surveillance procedure without ensuring adequate operational margin to the technical specification limit. The licensee entered this issue into the corrective action program and initiated actions to revise the surveillance procedure to raise the as-left essential service water system flow rate.

Inspection Report# : [2011002](#) (*pdf*)

Significance: G Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE THE EFFECTS OF DYNAMIC LOADS AT THE CS DISCHARGE PIPING

An NRC-identified finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors when licensee personnel failed to evaluate the effects of dynamic loads at the containment spray discharge piping. The inspectors were concerned because portions of the containment spray discharge piping were normally voided by design and neither the structural design nor operation of the system addressed the dynamic loads that would result when the voided piping was rapidly filled following system initiation. The licensee entered this issue into the corrective action program and, at the time of the inspection, planned to include an evaluation of dynamic loads into the design basis of containment spray.

The performance deficiency was determined to be more than minor because it was associated with the Structures, Systems, Components, and Barrier Performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as having very low safety significance because it did not affect either core damage frequency or large early release frequency. The inspectors determined that this finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, because the licensee did not thoroughly evaluate external operating experience.

Inspection Report# : [2011002](#) (*pdf*)

Emergency Preparedness

Significance: SL-IV Jun 22, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval

The inspector identified a violation of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54(q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner. The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction

of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance. (Section 1EP4)

The related performance deficiency is tracked as item 200-502-02.

Inspection Report# : [2010502](#) (pdf)

Significance:  Jun 22, 2011

Identified By: NRC

Item Type: FIN Finding

Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval

The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding. (Section 1EP4)

The associated traditional enforcement item is tracked as item 2011-50X-01.

Inspection Report# : [2010502](#) (pdf)

Occupational Radiation Safety

Significance:  Mar 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

OUT-OF-DATE/EXPIRED RESPIRATOR CARTRIDGES

An NRC-identified finding of very low safety significance and an associated NCV of TS 5.4.1 was identified by the inspectors when out of date respirator cartridges were found available for use. Radiation protection procedures that cover respiratory protection program did not require cartridges to be replaced after the manufacturer specified shelf-life had expired. The manufacturer of the respirator canister recognized that it was possible that chemical cartridges, which were more than a year old, might lose some of their efficiency in their ability to absorb contaminants. The manufacturer prescribed an expiration date of 3 years from the date of the canister manufacture and this date was stamped on to the canister label.

The regulatory authority for respiratory protection is the Occupational Safety and Health Administration (OSHA). The regulations are defined in 29 CFR 1910.134 titled "Respiratory Protection." Title 29 CFR 1910.134(d)(3)(iii) provides requirements for the protection against gases and vapors. These requirements include that air purifying respirators be equipped with an End-of-Service Life Indicator (ESLI) or the employer implements a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. The employer shall describe in the respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.

The inspectors reviewed the guidance in IMC 0612, Appendix E, Examples of Minor Issues, but did not identify any examples similar to the performance deficiency. However, in accordance with IMC 0612, the inspectors determined that the finding was more than minor because if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, cartridges that were beyond the recommended shelf-life could lose some of their efficiency in their ability to absorb contaminants and result in additional radiation doses to the users. The finding was assessed using the Occupational Radiation SDP and was determined to be of very low safety significance because these problems were not as-low-as-is-reasonably-achievable (ALARA) planning issues, there were no overexposures, nor substantial potential for overexposures and the licensee's ability to assess dose was not compromised. Corrective actions planned by the licensee included replacing the expired cartridges and adding guidance to procedures for checking expiration dates during routine inventories. The inspectors determined that the cause of this incident involved a cross-cutting component in the human performance area for inadequate resources. Specifically, the licensee did not have complete, accurate and up-to-date procedures.

Inspection Report# : [2011002](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

Last modified : March 02, 2012

Byron 2

1Q/2012 Plant Inspection Findings

Initiating Events

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Structural Steel Beam Missing Fireproofing Materials

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of Byron Operating License Condition 2.E when fireproofing material on a structural beam in the 2A Safety Injection (SI) Pump Room was identified as missing. As part of their immediate corrective actions, the licensee implemented compensatory measures that included hourly fire watches until fireproofing of the steel beam was subsequently completed.

Inspection Report# : [2012002](#) (*pdf*)

Mitigating Systems

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Incomplete Component Cooling Water System and Essential Service Water System Code Examinations

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50.55a(g)(4) when licensee personnel failed to perform system leakage testing in a timely manner as required by Section XI of the ASME Code following modification activities that added piping and associated welds between Unit 1 and Unit 2 CC and SX systems. The licensee performed the required leakage tests which were all found to be acceptable.

Inspection Report# : [2012002](#) (*pdf*)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Control the Operating Status of Eight New Valves Affecting Two Safety Related Systems

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, App B, Criterion XIV, "Inspection, Test, and Operating Status," when licensee personnel failed to control the operating status of eight manual isolation valves that were installed as part of a modification. The licensee placed temporary identification tags on the valves and initiated a clearance order to control the position of these valves.

Inspection Report# : [2012002](#) (*pdf*)

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY VOIDED SECTIONS OF AF PIPING

The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," when licensee personnel failed to identify non-conforming conditions associated with voided piping within the Unit 1 and Unit 2 safety-related diesel driven auxiliary feedwater (AF) systems (i.e., between the AF 006B and 017B valves.) These sections of piping had been historically voided until they were recently re-design to be filled and maintained filled with water to address a NRC identified 10 CFR Part 50, Appendix B, Criterion III, "Design Control" Green non-cited violation (NCV). The licensee entered this issue

into their corrective action program as IR 1296819, IR 1292337, and IR 1295760. Corrective actions include instituting a Operations standing order, replacement of the Unit 1 AF drain valve, and a capping the Unit 2 AF drain valve.

The inspectors determined that the failure to identify the voided sections of AF piping prior to and following the inspector's observations and interactions with licensee staff and management was a performance deficiency. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 Initial Screening and Characterization of findings," Table 4a for the Mitigation Systems cornerstone. Specifically, the inspectors answered yes to question 1; design or qualification deficiency confirmed not to result in a loss of operability or functionality. This conclusion was reached after conservatively assuming that both sections of piping were completely voided and after reviewing tests performed by the licensee in response to the previously documented design control violation. This finding was associated with a cross-cutting aspect in the Human Performance, Resources component H.2(c). Specifically, the licensee did not have adequate procedures to ensure that these sections of piping were maintained filled with water. (Section 1R15)

Inspection Report# : [2011005](#) (*pdf*)

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

HIGH ENERGY LINE BREAK OPEERABILITY EVALUATION

The inspectors identified that the licensee did not meet multiple Operability Determination Process standards after identifying a non-conservative condition related to assumed closure times for hazard barrier dampers separating the turbine building from various safety-related rooms within the Auxiliary Building. The wall between these two building that house the dampers are commonly referred to as the "L-wall." The issues raised by the inspectors during their review of the Operability Evaluation (Revision 1 and Revision 2) resulted in the station: re-evaluating the non-conservative condition against aspects of the current licensing basis not previously considered, including applicable affected extent of condition room areas, and evaluating multiple common mode failures that the station had not previously considered under this review. In addition to the issues with the Operability Evaluation, the inspectors identified that applicable station calculations of record did not assume the correct licensing basis single failure. The licensee entered these issues into the their Corrective Action Program as IR 1184258, IR 1237133, IR 1238611, IR 1240295, IR 1244251, and IR 1276895. Corrective actions included two revisions of the Operability Evaluation, an assignment to reconstitute the applicable design basis calculation records, and plans to re-design "L-wall" HELB ventilation barriers to restore compliance.

This performance deficiency was determined to be more than minor because it was similar to the "not minor if" aspect of NRC Manual Chapter 0612, Appendix E, "Example of Minor Issues" example "3j" and dissimilar from the "minor because" aspect of this example to reasonably conclude that the finding was associated with the Mitigating Systems Design Control attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems Cornerstone. The inspectors answered "No" to all of the Mitigating Systems Cornerstone questions in Table 4a of IMC 0609.04, and, as a result, the finding screened as having very low safety significance (Green). This finding has a cross-cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area [P.1(c)] since the licensee failed to adequately evaluate a non-conforming condition associated with hazard barrier closure times. As a result, the licensee would not have implemented effective corrective actions to resolve the non-conformance. (Section 1R15)

Inspection Report# : [2011005](#) (*pdf*)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY ELEVATED RISK STATUS

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50.65,

“Requirements for Monitoring the Effectiveness of Maintenance at Nuclear power Plants,” when licensee personnel failed to accurately assess plant risk during maintenance activities. The inspectors determined that the licensee failed to identify and take actions required to address an increase in risk when the Unit 2 Component Cooling Water (CC) heat exchanger was removed from service. Specifically, for 0.6 days the Unit 2 CC heat exchanger was removed from service and the plant remained in a Green risk status although the licensee's maintenance risk management procedure prescribed that a Yellow risk status be entered and that certain Risk Management Actions (RMAs) be taken. Upon identification and notification by the NRC inspectors, licensee personnel revised the plant risk status from Green to Yellow and took the appropriate RMAs. The issue was entered into the licensee's corrective action program as Issue Report (IR) 1262639.

The performance deficiency was determined to be more than minor because it was associated with the Human Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The performance deficiency was also determined to be more than minor because the finding was similar to IMC 0609, Appendix E, Example 7.e, and resulted in actual plant risk being in a higher risk category established by the licensee than had been previously declared. The Byron Standardized Plant Analysis Risk (SPAR) model Version 8.18 and SAPHIRE model Version 8.0.7.17 was used to calculate an Incremental Core Damage Probability Deficit (ICDPD) for the condition of the Unit 2 CC heat exchanger being unavailable for 0.6 days. The result was an ICDPD of less than $5E-7$. Based on the analysis, the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect in the Work Control component of the Human Performance cross-cutting area [H.3.(a)] because the licensee failed to appropriately incorporate risk insights when the Unit 2 CC heat exchanger was removed from service. (Section 1R13)

Inspection Report# : [2011004](#) (*pdf*)

Significance: SL-IV Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a Severity Level IV NCV of 10 CFR 50.59, “Changes, Tests, and Experiments,” when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification to the facility that permitted the Unit 1 and Unit 2 “A” Auxiliary Feedwater (AF) trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee issued a Standing Order to modify the Emergency Operating Procedure which governed the use of the modification and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The issue was entered into the licensee's corrective action program as IR 1257908.

The violation was determined to be more than minor because the inspectors determined that the change required prior NRC approval. Violations of 10 CFR 50.59 are dispositioned using the traditional enforcement process because they are considered to be violations that potentially impede or impact the regulatory process. In accordance with Section 6.1.d.2 of the NRC Enforcement Policy, this violation is categorized as Severity Level IV because the resulting changes were evaluated by the SDP as having very low safety significance. (Section 40A2.3)

The associated performance deficiency is tracked as item 2011-004-03.

Inspection Report# : [2011004](#) (*pdf*)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: FIN Finding

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a finding of very low safety significance (Green) when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification

to the facility that permitted the Unit 1 and Unit 2 “A” Auxiliary Feedwater (AF) trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee issued a Standing Order to modify the Emergency Operating Procedure which governed the use of the modification and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The issue was entered into the licensee’s corrective action program as IR 1257908.

The finding was determined to be more than minor because the inspectors determined that the change required prior NRC approval. The underlying technical issue evaluated through the SDP determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Phase 1 - Initial Screening and Characterization of Findings,” Table 4a, for the Mitigating Systems Cornerstone. Specifically, the inspectors answered “Yes” to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this was a change confirmed not to result in the loss of operability. Based upon this Phase 1 screening, the inspectors concluded that the issue was of very low safety significance (Green). This finding had a cross-cutting aspect in the Operating Experience component of the Problem Identification and Resolution (PI&R) cross-cutting area [P.2.(b)] because the licensee failed to make adequate use of known industry operating experience in the screening of a modification prior to installation. (Section 40A2.3)

The associated traditional enforcement item is tracked as item 2011-004-02.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

DESIGN OF AUXILIARY FEEDWATER SYSTEM INCLUDED VOIDS IN SAFETY RELATED ALTERNATE SUCTION FLOWPATHS

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion III, “Design Control,” when licensee personnel failed to properly analyze the configuration of the Essential Service Water (SX) connections to the AF pumps. Specifically, a section of the piping was intentionally maintained empty (voided), but was not previously analyzed. This condition existed since initial plant construction. The issue was entered into the licensee’s corrective action program as IR 1172938.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Design Control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the unverified configuration might have rendered each of the AF pumps inoperable. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Phase - 1 Initial Screening and Characterization of Findings,” Table 4a, for the Mitigating Systems Cornerstone. Specifically, the inspectors answered “Yes” to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this finding was confirmed not to result in a loss of operability. This conclusion was reached after reviewing tests performed by the licensee. The tests demonstrated there was reasonable assurance that the AF system would perform its safety function in the installed configuration. Additionally, the licensee filled the voided sections of pipe, restoring compliance with the licensed design basis. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not indicative of current licensee performance. (Section 40A5)

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 02, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

UNTIMELY CORRECTIVE ACTION FOR PREVIOUSLY IDENTIFIED NON-CITED VIOLATIONS (SECTION 40a2.1.B.3.I)

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” when licensee personnel failed to implement timely corrective actions to address two previously issued NCVs. The two NCVs were related to the lack of design analysis documentation associated with the Recycle Holdup Tank (RHUT); and tornado missile and seismic protection for the Diesel Oil Storage Tank

(DOST) vent lines. Specifically, the licensee had not completed required design analyses for these issues at the conclusion of this inspection, although the violation associated with the RHUT was initially identified by NRC inspectors in June 2007 and the violation associated with the DOST vent lines was initially identified by NRC inspectors in February 2009. The licensee entered this issue into their CAP as IR 1269928 and planned to complete the required analyses by April 2012.

This finding was of more than minor significance because the issue was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to all the Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). This finding had a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area (H.2(a)) because the licensee failed to maintain long-term plant safety through minimization of long-standing equipment issues. (Section 40A2.1.b.3.i)

Inspection Report# : [2011008](#) (*pdf*)

Significance:  Sep 02, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO INITIATE ISSUE REPORTS

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when licensee personnel failed to initiate IRs during the review of OPEX in accordance with licensee procedures to ensure that immediate actions, operability determinations, and reportability concerns were addressed by shift management within 24 hours. The licensee entered this issue into the CAP as IR 1257548 and completed the required shift management review.

The finding was of more than minor significance because, if left uncorrected, the issue would have the potential to lead to a more significant safety concern. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to all the Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). This finding had a cross-cutting aspect in the Operating Experience (OPEX) component of the Problem Identification and Resolution (PI&R) cross-cutting area (P.2(a)) because the licensee's procedures and guidance for OPEX did not ensure the systematic collection, evaluation, and communication to affected internal stakeholders, in a timely manner, of relevant internal and external OPEX. (Section 40A2.2.c)

Inspection Report# : [2011008](#) (*pdf*)

Significance:  Aug 26, 2011

Identified By: NRC

Item Type: FIN Finding

Inadequate Extent of Cause for 2A EDG Lube Oil Leak

The inspector identified a finding of very low safety significance when licensee personnel failed to perform an adequate extent of cause review in the root cause evaluation for the 2A EDG lube oil cooler leak. Specifically, the root cause evaluation identified that the root cause for the White finding was the absence of a formal, structured process to ensure that EPRI documents were reviewed to capture good work practices. However, the extent of cause review performed by the licensee was narrow in scope and did not include other potentially vulnerable programs other than that which affected the EDG lube oil cooler (i.e. the leakage reduction series publications). The licensee entered this issue into their corrective action program in an effort to define an appropriate scope for a supplemental extent of cause evaluation effort.

The inspector concluded the finding was more than minor because if left uncorrected it could become a more

significant safety concern. Specifically, the licensee's stated root cause of not having a formal process in place to incorporate EPRI documents from the Sealing Technology and Plant Leakage Reduction Series, which led to an inoperable EDG, could also impact other programs or processes. However, the potential impact of the identified root cause on other programs or processes were not reviewed as part of the licensee's extent of cause review effort. The inspector determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to the Mitigating Systems Cornerstone questions. Therefore, the finding screened as having very low safety significance (Green). The finding had an associated cross-cutting aspect in the Self and Independent Assessments component of the Problem Identification and Resolution cross-cutting area, because the licensee's assessment on the readiness for the NRC Supplemental Inspection failed to recognize the weakness in the extent of cause discussion (P.3(a)).

Inspection Report# : [2011016](#) (pdf)

Significance: G Jun 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ENSURE THAT THE DESIGN OF THE AF SUCTION PIPING WAS ADEQUATE TO PREVENT AIR ENTRAINMENT FOLLOWING A SEISMIC OR TORNADO EVENT

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to analyze whether the design of the auxiliary feedwater system ensured that air entrained into the system following a postulated seismic or tornado event did not prevent the system from performing its safety function. Specifically, licensee personnel failed to evaluate the failure of non-seismically qualified condensate storage tank suction piping during an earthquake or tornado that would cause the operating auxiliary feedwater pumps to draw air from the break location, potentially air-binding the pumps. The licensee entered this issue into their corrective action program to determine the required changes to the design of the system and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Protection 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. The finding screened as having very low safety significance because it was a design deficiency confirmed not to result in a loss of operability or functionality. The inspectors determined that there was no cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2011003](#) (pdf)

Significance: G Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Specify and Perform Required Independent Quality Verification Hold Point Inspections.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion X, "Inspection," for the failure to ensure that independent quality verification (QV) inspection hold points (HPs) were specified in work orders (WOs) used during Raychem splicing activities on a safety-related instrumentation cable, in the containment. Specifically, during replacement of the failed RCS Loop 1B Wide-Range, Hot-Leg (resistance temperature detector) RTD 1TE-RC023A in 2006 and in 2008, the licensee used electrical Raychem splices to connect the RTD leads to its cable without including the required QV inspection HPs in the associated WO instructions. Consequently, the QV independent inspections were not performed as required by Exelon corporate Nuclear Oversight (NO) and Maintenance procedures and by the Quality Assurance Topical Report (QATR). Subsequently, the licensee initiated corrective actions to rework the Raychem splice at the next window of opportunity and to communicate and reinforce the importance of inclusion of QV HP inspections, when required. This issue was entered into the licensee's corrective action program (CAP) under Issue Reports (IRs) 01226961, 01214766, 01217502 and 01218406.

The failure to ensure that independent QV HP inspections were included in WO instructions as required by Exelon Corporate procedures and the QATR was a performance deficiency. This performance deficiency was more than minor because, if left uncorrected, it would lead to a more significant safety concern in that the failure to

independently verify quality attributes in safety-related equipment could involve an adverse impact to plant equipment. The inspectors concluded that this finding was associated with the Mitigating Systems Cornerstone. This performance deficiency was determined to have very low safety significance in Phase I of the SDP, since it was confirmed to involve a lack of required QV HPs for this Raychem splicing activity that did not result in a loss of operability or functionality. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision Making, because the licensee did not have an effective systematic process for obtaining interdisciplinary reviews of proposed maintenance work instructions to determine whether independent QV HP inspections were appropriately specified and implemented to assure plant safety. [H.1(a)] (Section 1R17.2.b)
Inspection Report# : [2011009](#) (*pdf*)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Procedure Requirements for Temporary Scaffolds that Remain in Place for Over 90 Days.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," related to inadequate control of installed temporary scaffolds. Specifically, licensee's procedure for the installation, modification, and removal of scaffolds was not followed, on a routine basis, for temporary scaffolds that remained in the plant for greater than 90 days. This could impact the operability or availability of plant system. The licensee entered this issue into the CAP as IR 01212656. Corrective actions for this issue included an investigation as to why procedure adherence issues with regard to scaffolds continue to occur and an extent of condition review of similar plant programs.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix E, "Examples of Minor Issues." Specifically, the inspectors concluded that this issue was similar to the more than minor criteria established in Example 4.a, "Insignificant Procedural Errors," since the licensee failed to perform the required engineering evaluation for the temporary installed scaffolding that remained in the plant for more than 90 days. Therefore, this performance deficiency also impacted the Mitigating Systems Cornerstone objective of protection against external events (seismic events). The finding was of very low safety significance because there was not a confirmed loss of operability of any mitigating system component. The inspectors determined that the underlying finding had a cross-cutting aspect in the area of Human Performance, Decision-Making, because the licensee did not make the appropriate safety or risk significant decisions by failing to utilize the systematic scaffolding construction process to ensure adequate quality and, therefore, adequate safety was maintained when scaffolds remained installed for greater than 90 days. [H.1(a)]. (Section 4OA2.b.(1))
Inspection Report# : [2011009](#) (*pdf*)

Significance:  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

EDG Usable Fuel Calculations Failed to Consider Appropriate EDG Frequency Variations.

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to correctly translate applicable design basis (calculations) into specifications. Specifically, the licensee failed to take into account fuel oil consumption at an increased frequency of 61.2 Hz in their EDG loading calculations which resulted in non-conservative Technical Specifications. The licensee entered this finding into their corrective action program as IR 01226844 and implemented actions to evaluate incorporation of the EDG frequency administrative limits into applicable site operating procedures to ensure an adequate supply of fuel was available.

The inspectors determined that this finding was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of design control and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to account for the increased fuel oil consumption resulting from operation at a higher EDG frequency variation of 61.2 Hz as allowed by TS 3.8.1 and room temperature of up to 120°F in their EDG loading calculations. Therefore, the licensee did not ensure that the minimum fuel oil level in the storage tanks, as required per TS 3.8.3, was adequate to support the EDGs' 7-day mission time. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution Corrective Action Program because the licensee did not

thoroughly evaluate the EDG fuel oil consumption when considering EDG frequency variation. Specifically, the licensee failed to translate applicable design bases into specifications, which resulted in non-conservative TS. [P.1(c)] (Section 40A2.b.(2))

Inspection Report# : [2011009](#) (*pdf*)

Significance: G May 04, 2011

Identified By: NRC

Item Type: FIN Finding

Failure to Adequately Document and Justify Continued Operability of the Auxiliary Feedwater System.

A finding of very low safety significance was identified at the Braidwood and Byron Stations by the inspectors when licensee personnel failed to adequately document and justify continued operability of the auxiliary feedwater (AF) system. Specifically, licensee evaluations of known voids in the AF alternate source suction piping did not provide an adequate technical basis to support operability of the AF pumps during a suction swap-over scenario. Subsequently, the licensee filled the voids and a Root Cause Evaluation (RCE) was initiated under Issue Report (IR) 1194196 (Braidwood) and IR 1194324 (Byron). The RCE was initiated to determine why prior opportunities for discovery of the inadequate void acceptance basis were missed and to develop associated corrective actions.

The inspectors determined the finding was more than minor because, if left uncorrected, the failure to recognize conditions that could render equipment inoperable had the potential to lead to a more significant safety concern. Because the finding was not a design deficiency, did not result in a loss of safety function, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event, the inspectors concluded that the finding was of very low safety significance (Green). This finding was associated with a cross-cutting aspect in the Decision-Making component of the Human Performance cross-cutting area because the licensee did not use conservative assumptions and did not verify the validity of underlying assumptions in their evaluations of the AF suction piping voids. (H.1(b)) (Section 40A5.1.7.b)

Inspection Report# : [2011015](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Significance: SL-IV Jun 22, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval

The inspector identified a violation of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54(q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner. The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance. (Section 1EP4)

The related performance deficiency is tracked as item 200-502-02.

Inspection Report# : [2010502](#) (*pdf*)

Significance: **G** Jun 22, 2011

Identified By: NRC

Item Type: FIN Finding

Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval

The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54 (q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, Revision 22, which indefinitely extended the start of the 15 minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(b)(4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HU6).

Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding. (Section 1EP4)

The associated traditional enforcement item is tracked as item 2011-50X-01.

Inspection Report# : [2010502](#) (*pdf*)

Occupational Radiation Safety

Public Radiation Safety

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.

Miscellaneous

Last modified : May 29, 2012

Byron 2

2Q/2012 Plant Inspection Findings

Initiating Events

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Structural Steel Beam Missing Fireproofing Materials

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of Byron Operating License Condition 2.E when fireproofing material on a structural beam in the 2A Safety Injection (SI) Pump Room was identified as missing. As part of their immediate corrective actions, the licensee implemented compensatory measures that included hourly fire watches until fireproofing of the steel beam was subsequently completed.

Inspection Report# : [2012002](#) (pdf)

Mitigating Systems

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conforming 480/120 Vac Motor Control Contactors

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure qualified components were installed in the plant. Specifically, purchase orders did not specify the minimum pickup voltage for NEMA Size 1 through Size 4 safety-related motor-control contactors such that the installed contactors were not rated to function at the design basis minimum voltage. The licensee entered the issue into their corrective action program and based on a sample testing of contactors demonstrated there was adequate margin between the highest found minimum-pickup voltage and the design basis pickup voltage.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System Cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, having installed contactors that may not function under degraded voltage conditions could affect the operability of multiple safety-related structures, systems and components during an event. The finding screened as of very low safety significance (Green) because the finding involved a design or qualification deficiency that did not result in a loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Verify the CCW System Capability to Withstand a Thermal Barrier Break

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure the component cooling water (CCW) system was capable of withstanding a reactor coolant pump thermal barrier break. Specifically, when assuming a single

failure of the automatic isolation function, the licensee failed to evaluate the break effect on the CCW system during the 3 minutes postulated to isolate the leak. The licensee entered the issue into their corrective action program; verified the CCW system would be able to withstand the postulated event, and planned to perform a detailed evaluation of the effect of a thermal barrier break on the CCW system.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to evaluate the effect of the thermal barrier rupture on the CCW system created reasonable doubt whether the system would be capable of withstanding the applied forces of this event. The finding screened as very low safety significance (Green) because the design deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

G

Significance: Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Calibration Tolerance Limits for Electrical Relay Settings

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to specify in a design calculation the allowable relay setpoint calibration tolerances. Specifically, the acceptance criteria used in relay setting calibration procedures was not bounded by the relay setting design calculations. The licensee entered this finding into their corrective action program and verified the calibrated relay settings would still provide adequate electrical protection coordination capability.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to adequately evaluate the design requirements of the relay settings could have resulted in a loss-of-relay coordination and could allow a fault on one piece of equipment to propagate to other safety-related equipment outside the designed isolation boundary. The finding screened as very low safety significance (Green) because the finding was design deficiency confirmed not to result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

G

Significance: Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Design Analyses Did Not Adequately Address Potential Flooding of the Auxiliary Building

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to adequately analyze potential design basis internal flooding events in the auxiliary building. Specifically, the licensee's analysis did not account for the possible single failure of an essential service water motor-operated isolation valve or its associated power supply, which would have prevented break isolation within 30 minutes. The licensee entered the issue into their corrective action program; verified essential service water piping in the auxiliary building would meet the "crack exclusion" pipe stress criteria, and planned to the revise the flooding analysis.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to adequately analyze potential design basis internal flooding events in the auxiliary building would affect the capability of safety-related equipment to withstand the postulated event. The finding screened as very low safety significance (Green) because the design

deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Incomplete Component Cooling Water System and Essential Service Water System Code Examinations

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50.55a(g)(4) when licensee personnel failed to perform system leakage testing in a timely manner as required by Section XI of the ASME Code following modification activities that added piping and associated welds between Unit 1 and Unit 2 CC and SX systems. The licensee performed the required leakage tests which were all found to be acceptable.

Inspection Report# : [2012002](#) (pdf)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Control the Operating Status of Eight New Valves Affecting Two Safety Related Systems

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, App B, Criterion XIV, "Inspection, Test, and Operating Status," when licensee personnel failed to control the operating status of eight manual isolation valves that were installed as part of a modification. The licensee placed temporary identification tags on the valves and initiated a clearance order to control the position of these valves.

Inspection Report# : [2012002](#) (pdf)

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY VOIDED SECTIONS OF AF PIPING

The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," when licensee personnel failed to identify non-conforming conditions associated with voided piping within the Unit 1 and Unit 2 safety-related diesel driven auxiliary feedwater (AF) systems (i.e., between the AF 006B and 017B valves.) These sections of piping had been historically voided until they were recently re-design to be filled and maintained filled with water to address a NRC identified 10 CFR Part 50, Appendix B, Criterion III, "Design Control" Green non-cited violation (NCV). The licensee entered this issue into their corrective action program as IR 1296819, IR 1292337, and IR 1295760. Corrective actions include instituting a Operations standing order, replacement of the Unit 1 AF drain valve, and a capping the Unit 2 AF drain valve.

The inspectors determined that the failure to identify the voided sections of AF piping prior to and following the inspector's observations and interactions with licensee staff and management was a performance deficiency. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 Initial Screening and Characterization of findings," Table 4a for the Mitigation Systems cornerstone. Specifically, the inspectors answered yes to question 1; design or qualification deficiency confirmed not to result in a loss of operability or functionality. This conclusion was reached after conservatively assuming that both sections of piping were completely voided and after reviewing tests performed by the licensee in response to the previously documented design control violation. This finding was associated with a cross-cutting aspect in the Human Performance, Resources component H.2(c). Specifically, the licensee did not have adequate procedures to ensure that these sections of piping were maintained filled with water. (Section 1R15)

Inspection Report# : [2011005](#) (pdf)

G**Significance:** Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

HIGH ENERGY LINE BREAK OPEERABILITY EVALUATION

The inspectors identified that the licensee did not meet multiple Operability Determination Process standards after identifying a non-conservative condition related to assumed closure times for hazard barrier dampers separating the turbine building from various safety-related rooms within the Auxiliary Building. The wall between these two building that house the dampers are commonly referred to as the "L-wall." The issues raised by the inspectors during their review of the Operability Evaluation (Revision 1 and Revision 2) resulted in the station: re-evaluating the non-conservative condition against aspects of the current licensing basis not previously considered, including applicable affected extent of condition room areas, and evaluating multiple common mode failures that the station had not previously considered under this review. In addition to the issues with the Operability Evaluation, the inspectors identified that applicable station calculations of record did not assume the correct licensing basis single failure. The licensee entered these issues into the their Corrective Action Program as IR 1184258, IR 1237133, IR 1238611, IR 1240295, IR 1244251, and IR 1276895. Corrective actions included two revisions of the Operability Evaluation, an assignment to reconstitute the applicable design basis calculation records, and plans to re-design "L-wall" HELB ventilation barriers to restore compliance.

This performance deficiency was determined to be more than minor because it was similar to the "not minor if" aspect of NRC Manual Chapter 0612, Appendix E, "Example of Minor Issues" example "3j" and dissimilar from the "minor because" aspect of this example to reasonably conclude that the finding was associated with the Mitigating Systems Design Control attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems Cornerstone. The inspectors answered "No" to all of the Mitigating Systems Cornerstone questions in Table 4a of IMC 0609.04, and, as a result, the finding screened as having very low safety significance (Green). This finding has a cross-cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area [P.1(c)] since the licensee failed to adequately evaluate a non-conforming condition associated with hazard barrier closure times. As a result, the licensee would not have implemented effective corrective actions to resolve the non-conformance. (Section 1R15)

Inspection Report# : [2011005](#) (pdf)**G****Significance:** Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY ELEVATED RISK STATUS

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear power Plants," when licensee personnel failed to accurately assess plant risk during maintenance activities. The inspectors determined that the licensee failed to identify and take actions required to address an increase in risk when the Unit 2 Component Cooling Water (CC) heat exchanger was removed from service. Specifically, for 0.6 days the Unit 2 CC heat exchanger was removed from service and the plant remained in a Green risk status although the licensee's maintenance risk management procedure prescribed that a Yellow risk status be entered and that certain Risk Management Actions (RMAs) be taken. Upon identification and notification by the NRC inspectors, licensee personnel revised the plant risk status from Green to Yellow and took the appropriate RMAs. The issue was entered into the licensee's corrective action program as Issue Report (IR) 1262639.

The performance deficiency was determined to be more than minor because it was associated with the Human Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The performance deficiency was also determined to be more than minor because the finding was similar to IMC 0609, Appendix E, Example 7.e, and resulted in actual plant risk being in a higher risk category established by the licensee than had been previously declared. The Byron Standardized Plant Analysis Risk (SPAR)

model Version 8.18 and SAPHIRE model Version 8.0.7.17 was used to calculate an Incremental Core Damage Probability Deficit (ICDPD) for the condition of the Unit 2 CC heat exchanger being unavailable for 0.6 days. The result was an ICDPD of less than 5E-7. Based on the analysis, the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect in the Work Control component of the Human Performance cross-cutting area [H.3.(a)] because the licensee failed to appropriately incorporate risk insights when the Unit 2 CC heat exchanger was removed from service. (Section 1R13)

Inspection Report# : [2011004](#) (*pdf*)

Significance: SL-IV Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a Severity Level IV NCV of 10 CFR 50.59, "Changes, Tests, and Experiments," when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification to the facility that permitted the Unit 1 and Unit 2 "A" Auxiliary Feedwater (AF) trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee issued a Standing Order to modify the Emergency Operating Procedure which governed the use of the modification and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The issue was entered into the licensee's corrective action program as IR 1257908.

The violation was determined to be more than minor because the inspectors determined that the change required prior NRC approval. Violations of 10 CFR 50.59 are dispositioned using the traditional enforcement process because they are considered to be violations that potentially impede or impact the regulatory process. In accordance with Section 6.1.d.2 of the NRC Enforcement Policy, this violation is categorized as Severity Level IV because the resulting changes were evaluated by the SDP as having very low safety significance. (Section 40A2.3)

The associated performance deficiency is tracked as item 2011-004-03.

Inspection Report# : [2011004](#) (*pdf*)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: FIN Finding

MODIFICATION OF THE AUXILIARY FEEDWATER SYSTEM WITHOUT PRIOR NRC APPROVAL

The inspectors identified a finding of very low safety significance (Green) when licensee personnel failed to obtain a license amendment prior to implementing a proposed change to the plant that resulted in a more than minimal increase in the likelihood of occurrence of a malfunction of a structure, system or component important to safety previously evaluated in the Updated Final Safety Analysis Report (UFSAR). Specifically, the licensee performed a modification to the facility that permitted the Unit 1 and Unit 2 "A" Auxiliary Feedwater (AF) trains to be shared between units and the 10 CFR 50.59 evaluation that was performed reached the erroneous conclusion that prior NRC approval was not required. The licensee issued a Standing Order to modify the Emergency Operating Procedure which governed the use of the modification and planned to submit a License Amendment Request (LAR) to the NRC for this design change. The issue was entered into the licensee's corrective action program as IR 1257908.

The finding was determined to be more than minor because the inspectors determined that the change required prior NRC approval. The underlying technical issue evaluated through the SDP determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems Cornerstone. Specifically, the inspectors answered "Yes" to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this was a change confirmed not to result in the loss of operability. Based upon this Phase 1 screening, the inspectors concluded that the issue was of very low safety significance (Green). This finding had a cross-cutting aspect in the Operating Experience component of the Problem Identification and Resolution (PI&R) cross-cutting area [P.2.(b)] because the licensee failed to make adequate use of known industry

operating experience in the screening of a modification prior to installation. (Section 40A2.3)

The associated traditional enforcement item is tracked as item 2011-004-02.

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

DESIGN OF AUXILIARY FEEDWATER SYSTEM INCLUDED VOIDS IN SAFETY RELATED ALTERNATE SUCTION FLOWPATHS

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to properly analyze the configuration of the Essential Service Water (SX) connections to the AF pumps. Specifically, a section of the piping was intentionally maintained empty (voided), but was not previously analyzed. This condition existed since initial plant construction. The issue was entered into the licensee's corrective action program as IR 1172938.

The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone attribute of Design Control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the unverified configuration might have rendered each of the AF pumps inoperable. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase - 1 Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems Cornerstone. Specifically, the inspectors answered "Yes" to Question 1 of the Mitigating Systems Cornerstone column of the Phase 1 worksheet because the inspectors concluded that this finding was confirmed not to result in a loss of operability. This conclusion was reached after reviewing tests performed by the licensee. The tests demonstrated there was reasonable assurance that the AF system would perform its safety function in the installed configuration. Additionally, the licensee filled the voided sections of pipe, restoring compliance with the licensed design basis. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not indicative of current licensee performance. (Section 40A5)

Inspection Report# : [2011004](#) (pdf)

Significance:  Sep 02, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

UNTIMELY CORRECTIVE ACTION FOR PREVIOUSLY IDENTIFIED NON-CITED VIOLATIONS (SECTION 40a2.1.B.3.I)

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," when licensee personnel failed to implement timely corrective actions to address two previously issued NCVs. The two NCVs were related to the lack of design analysis documentation associated with the Recycle Holdup Tank (RHUT); and tornado missile and seismic protection for the Diesel Oil Storage Tank (DOST) vent lines. Specifically, the licensee had not completed required design analyses for these issues at the conclusion of this inspection, although the violation associated with the RHUT was initially identified by NRC inspectors in June 2007 and the violation associated with the DOST vent lines was initially identified by NRC inspectors in February 2009. The licensee entered this issue into their CAP as IR 1269928 and planned to complete the required analyses by April 2012.

This finding was of more than minor significance because the issue was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to all the Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). This finding had a

cross-cutting aspect in the Resources component of the Human Performance cross-cutting area (H.2(a)) because the licensee failed to maintain long-term plant safety through minimization of long-standing equipment issues. (Section 40A2.1.b.3.i)

Inspection Report# : [2011008](#) (pdf)

G

Significance: Sep 02, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO INITIATE ISSUE REPORTS

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when licensee personnel failed to initiate IRs during the review of OPEX in accordance with licensee procedures to ensure that immediate actions, operability determinations, and reportability concerns were addressed by shift management within 24 hours. The licensee entered this issue into the CAP as IR 1257548 and completed the required shift management review.

The finding was of more than minor significance because, if left uncorrected, the issue would have the potential to lead to a more significant safety concern. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to all the Mitigating Systems Cornerstone questions. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system. Therefore, the finding screened as having very low safety significance (Green). This finding had a cross-cutting aspect in the Operating Experience (OPEX) component of the Problem Identification and Resolution (PI&R) cross-cutting area (P.2(a)) because the licensee's procedures and guidance for OPEX did not ensure the systematic collection, evaluation, and communication to affected internal stakeholders, in a timely manner, of relevant internal and external OPEX. (Section 40A2.2.c)

Inspection Report# : [2011008](#) (pdf)

G

Significance: Aug 26, 2011

Identified By: NRC

Item Type: FIN Finding

Inadequate Extent of Cause for 2A EDG Lube Oil Leak

The inspector identified a finding of very low safety significance when licensee personnel failed to perform an adequate extent of cause review in the root cause evaluation for the 2A EDG lube oil cooler leak. Specifically, the root cause evaluation identified that the root cause for the White finding was the absence of a formal, structured process to ensure that EPRI documents were reviewed to capture good work practices. However, the extent of cause review performed by the licensee was narrow in scope and did not include other potentially vulnerable programs other than that which affected the EDG lube oil cooler (i.e. the leakage reduction series publications). The licensee entered this issue into their corrective action program in an effort to define an appropriate scope for a supplemental extent of cause evaluation effort.

The inspector concluded the finding was more than minor because if left uncorrected it could become a more significant safety concern. Specifically, the licensee's stated root cause of not having a formal process in place to incorporate EPRI documents from the Sealing Technology and Plant Leakage Reduction Series, which led to an inoperable EDG, could also impact other programs or processes. However, the potential impact of the identified root cause on other programs or processes were not reviewed as part of the licensee's extent of cause review effort. The inspector determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 4, "Phase I Initial Screening and Characterization of Findings," Table 4a for the Mitigating Systems Cornerstone and answered "No" to the Mitigating Systems Cornerstone questions. Therefore, the finding screened as having very low safety significance (Green). The finding had an associated cross-cutting aspect in the Self and Independent Assessments component of the Problem Identification and Resolution cross-cutting area, because the licensee's assessment on the readiness for the NRC Supplemental Inspection failed to recognize the weakness in the extent of cause discussion (P.3(a)).

Inspection Report# : [2011016](#) (pdf)

Barrier Integrity

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Means to Detect Leak in Emergency Core Cooling Flow Path

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to provide a means to detect and isolate a leak in the emergency core cooling flow path within 30 minutes, which was contrary to the Updated Final Safety Analysis Report. Specifically, the licensee failed to provide a means to detect and isolate a leak within 30 minutes in that neither sump alarms nor radiation monitors were provided for the safety injection pump rooms. The licensee entered the issue into their corrective action program and planned to evaluate options for modifications to address detection of emergency core cooling system leakage.

The performance deficiency was determined to be more than minor because it was associated with the Barrier Integrity cornerstone attribute of Design Control and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to provide a means to detect and isolate a leak in the emergency core cooling flow path within 30 minutes could result in a delayed isolation of such a leak after an accident and result in a greater radionuclide release to the auxiliary building and the environment. The finding screened as very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : September 12, 2012

Byron 2

3Q/2012 Plant Inspection Findings

Initiating Events

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Structural Steel Beam Missing Fireproofing Materials

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of Byron Operating License Condition 2.E when fireproofing material on a structural beam in the 2A Safety Injection (SI) Pump Room was identified as missing. As part of their immediate corrective actions, the licensee implemented compensatory measures that included hourly fire watches until fireproofing of the steel beam was subsequently completed.

Inspection Report# : [2012002](#) (*pdf*)

Mitigating Systems

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conforming 480/120 Vac Motor Control Contactors

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure qualified components were installed in the plant. Specifically, purchase orders did not specify the minimum pickup voltage for NEMA Size 1 through Size 4 safety-related motor-control contactors such that the installed contactors were not rated to function at the design basis minimum voltage. The licensee entered the issue into their corrective action program and based on a sample testing of contactors demonstrated there was adequate margin between the highest found minimum-pickup voltage and the design basis pickup voltage.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System Cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, having installed contactors that may not function under degraded voltage conditions could affect the operability of multiple safety-related structures, systems and components during an event. The finding screened as of very low safety significance (Green) because the finding involved a design or qualification deficiency that did not result in a loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (*pdf*)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Verify the CCW System Capability to Withstand a Thermal Barrier Break

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure the component cooling water (CCW) system was capable of withstanding a reactor coolant pump thermal barrier break. Specifically, when assuming a single failure of the automatic isolation function, the licensee failed to evaluate the break effect on the CCW system during the 3 minutes postulated to isolate the leak. The licensee entered the issue into their corrective action program; verified the CCW system would be able to withstand the postulated event, and planned to perform a detailed evaluation of the effect of a thermal barrier break on the CCW system.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to evaluate the effect of the thermal barrier rupture on the CCW system created reasonable doubt whether the system would be capable of withstanding the applied forces of this event. The finding screened as very low safety significance (Green) because the design deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Calibration Tolerance Limits for Electrical Relay Settings

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to specify in a design calculation the allowable relay setpoint calibration tolerances. Specifically, the acceptance criteria used in relay setting calibration procedures was not bounded by the relay setting design calculations. The licensee entered this finding into their corrective action program and verified the calibrated relay settings would still provide adequate electrical protection coordination capability.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to adequately evaluate the design requirements of the relay settings could have resulted in a loss-of-relay coordination and could allow a fault on one piece of equipment to propagate to other safety-related equipment outside the designed isolation boundary. The finding screened as very low safety significance (Green) because the finding was design deficiency confirmed not to result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Design Analyses Did Not Adequately Address Potential Flooding of the Auxiliary Building

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to adequately analyze potential design basis internal flooding events in the auxiliary building. Specifically, the licensee's analysis did not account for the possible single

failure of an essential service water motor-operated isolation valve or its associated power supply, which would have prevented break isolation within 30 minutes. The licensee entered the issue into their corrective action program; verified essential service water piping in the auxiliary building would meet the “crack exclusion” pipe stress criteria, and planned to revise the flooding analysis.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to adequately analyze potential design basis internal flooding events in the auxiliary building would affect the capability of safety-related equipment to withstand the postulated event. The finding screened as very low safety significance (Green) because the design deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (*pdf*)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Incomplete Component Cooling Water System and Essential Service Water System Code Examinations

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50.55a(g)(4) when licensee personnel failed to perform system leakage testing in a timely manner as required by Section XI of the ASME Code following modification activities that added piping and associated welds between Unit 1 and Unit 2 CC and SX systems. The licensee performed the required leakage tests which were all found to be acceptable.

Inspection Report# : [2012002](#) (*pdf*)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Control the Operating Status of Eight New Valves Affecting Two Safety Related Systems

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, App B, Criterion XIV, "Inspection, Test, and Operating Status," when licensee personnel failed to control the operating status of eight manual isolation valves that were installed as part of a modification. The licensee placed temporary identification tags on the valves and initiated a clearance order to control the position of these valves.

Inspection Report# : [2012002](#) (*pdf*)

Significance:  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY VOIDED SECTIONS OF AF PIPING

The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” when licensee personnel failed to identify non-conforming conditions associated with voided piping within the Unit 1 and Unit 2 safety-related diesel driven auxiliary feedwater (AF) systems (i.e., between the AF 006B and 017B valves.) These sections of piping had been historically voided until they were recently re-designed to be filled and maintained filled with water to address a NRC identified 10 CFR Part 50, Appendix B, Criterion III, “Design Control” Green non-cited violation (NCV). The licensee entered this issue into their corrective action program as IR 1296819, IR 1292337, and IR 1295760. Corrective actions include instituting a Operations standing order, replacement of the Unit 1 AF drain valve, and a capping the Unit 2 AF drain valve.

The inspectors determined that the failure to identify the voided sections of AF piping prior to and following the inspector's observations and interactions with licensee staff and management was a performance deficiency. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 Initial Screening and Characterization of findings," Table 4a for the Mitigation Systems cornerstone. Specifically, the inspectors answered yes to question 1; design or qualification deficiency confirmed not to result in a loss of operability or functionality. This conclusion was reached after conservatively assuming that both sections of piping were completely voided and after reviewing tests performed by the licensee in response to the previously documented design control violation. This finding was associated with a cross-cutting aspect in the Human Performance, Resources component H.2(c). Specifically, the licensee did not have adequate procedures to ensure that these sections of piping were maintained filled with water. (Section 1R15)

Inspection Report# : [2011005](#) (pdf)

Significance: G Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

HIGH ENERGY LINE BREAK OPEERABILITY EVALUATION

The inspectors identified that the licensee did not meet multiple Operability Determination Process standards after identifying a non-conservative condition related to assumed closure times for hazard barrier dampers separating the turbine building from various safety-related rooms within the Auxiliary Building. The wall between these two building that house the dampers are commonly referred to as the "L-wall." The issues raised by the inspectors during their review of the Operability Evaluation (Revision 1 and Revision 2) resulted in the station: re-evaluating the non-conservative condition against aspects of the current licensing basis not previously considered, including applicable affected extent of condition room areas, and evaluating multiple common mode failures that the station had not previously considered under this review. In addition to the issues with the Operability Evaluation, the inspectors identified that applicable station calculations of record did not assume the correct licensing basis single failure. The licensee entered these issues into the their Corrective Action Program as IR 1184258, IR 1237133, IR 1238611, IR 1240295, IR 1244251, and IR 1276895. Corrective actions included two revisions of the Operability Evaluation, an assignment to reconstitute the applicable design basis calculation records, and plans to re-design "L-wall" HELB ventilation barriers to restore compliance.

This performance deficiency was determined to be more than minor because it was similar to the "not minor if" aspect of NRC Manual Chapter 0612, Appendix E, "Example of Minor Issues" example "3j" and dissimilar from the "minor because" aspect of this example to reasonably conclude that the finding was associated with the Mitigating Systems Design Control attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems Cornerstone. The inspectors answered "No" to all of the Mitigating Systems Cornerstone questions in Table 4a of IMC 0609.04, and, as a result, the finding screened as having very low safety significance (Green). This finding has a cross-cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area [P.1(c)] since the licensee failed to adequately evaluate a non-conforming condition associated with hazard barrier closure times. As a result, the licensee would not have implemented effective corrective actions to resolve the non-conformance. (Section 1R15)

Inspection Report# : [2011005](#) (pdf)

Barrier Integrity

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Means to Detect Leak in Emergency Core Cooling Flow Path

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to provide a means to detect and isolate a leak in the emergency core cooling flow path within 30 minutes, which was contrary to the Updated Final Safety Analysis Report. Specifically, the licensee failed to provide a means to detect and isolate a leak within 30 minutes in that neither sump alarms nor radiation monitors were provided for the safety injection pump rooms. The licensee entered the issue into their corrective action program and planned to evaluate options for modifications to address detection of emergency core cooling system leakage.

The performance deficiency was determined to be more than minor because it was associated with the Barrier Integrity cornerstone attribute of Design Control and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to provide a means to detect and isolate a leak in the emergency core cooling flow path within 30 minutes could result in a delayed isolation of such a leak after an accident and result in a greater radionuclide release to the auxiliary building and the environment. The finding screened as very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : November 30, 2012

Byron 2

4Q/2012 Plant Inspection Findings

Initiating Events

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Structural Steel Beam Missing Fireproofing Materials

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of Byron Operating License Condition 2.E when fireproofing material on a structural beam in the 2A Safety Injection (SI) Pump Room was identified as missing. As part of their immediate corrective actions, the licensee implemented compensatory measures that included hourly fire watches until fireproofing of the steel beam was subsequently completed.

Inspection Report# : [2012002](#) (*pdf*)

Mitigating Systems

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conforming 480/120 Vac Motor Control Contactors

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure qualified components were installed in the plant. Specifically, purchase orders did not specify the minimum pickup voltage for NEMA Size 1 through Size 4 safety-related motor-control contactors such that the installed contactors were not rated to function at the design basis minimum voltage. The licensee entered the issue into their corrective action program and based on a sample testing of contactors demonstrated there was adequate margin between the highest found minimum-pickup voltage and the design basis pickup voltage.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System Cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, having installed contactors that may not function under degraded voltage conditions could affect the operability of multiple safety-related structures, systems and components during an event. The finding screened as of very low safety significance (Green) because the finding involved a design or qualification deficiency that did not result in a loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (*pdf*)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Verify the CCW System Capability to Withstand a Thermal Barrier Break

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure the component cooling water (CCW) system was capable of withstanding a reactor coolant pump thermal barrier break. Specifically, when assuming a single

failure of the automatic isolation function, the licensee failed to evaluate the break effect on the CCW system during the 3 minutes postulated to isolate the leak. The licensee entered the issue into their corrective action program; verified the CCW system would be able to withstand the postulated event, and planned to perform a detailed evaluation of the effect of a thermal barrier break on the CCW system.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to evaluate the effect of the thermal barrier rupture on the CCW system created reasonable doubt whether the system would be capable of withstanding the applied forces of this event. The finding screened as very low safety significance (Green) because the design deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Calibration Tolerance Limits for Electrical Relay Settings

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to specify in a design calculation the allowable relay setpoint calibration tolerances. Specifically, the acceptance criteria used in relay setting calibration procedures was not bounded by the relay setting design calculations. The licensee entered this finding into their corrective action program and verified the calibrated relay settings would still provide adequate electrical protection coordination capability.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to adequately evaluate the design requirements of the relay settings could have resulted in a loss-of-relay coordination and could allow a fault on one piece of equipment to propagate to other safety-related equipment outside the designed isolation boundary. The finding screened as very low safety significance (Green) because the finding was design deficiency confirmed not to result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Design Analyses Did Not Adequately Address Potential Flooding of the Auxiliary Building

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to adequately analyze potential design basis internal flooding events in the auxiliary building. Specifically, the licensee's analysis did not account for the possible single failure of an essential service water motor-operated isolation valve or its associated power supply, which would have prevented break isolation within 30 minutes. The licensee entered the issue into their corrective action program; verified essential service water piping in the auxiliary building would meet the "crack exclusion" pipe stress criteria, and planned to the revise the flooding analysis.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to adequately analyze potential design basis internal flooding events in the auxiliary building would affect the capability of safety-related equipment to withstand the postulated event. The finding screened as very low safety significance (Green) because the design

deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Incomplete Component Cooling Water System and Essential Service Water System Code Examinations

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50.55a(g)(4) when licensee personnel failed to perform system leakage testing in a timely manner as required by Section XI of the ASME Code following modification activities that added piping and associated welds between Unit 1 and Unit 2 CC and SX systems. The licensee performed the required leakage tests which were all found to be acceptable.

Inspection Report# : [2012002](#) (pdf)

Significance:  Mar 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Control the Operating Status of Eight New Valves Affecting Two Safety Related Systems

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, App B, Criterion XIV, "Inspection, Test, and Operating Status," when licensee personnel failed to control the operating status of eight manual isolation valves that were installed as part of a modification. The licensee placed temporary identification tags on the valves and initiated a clearance order to control the position of these valves.

Inspection Report# : [2012002](#) (pdf)

Barrier Integrity

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO SUBMIT A 10 CFR 50.73(A)(2)(V) REPORT FOR INOPERABLE CONTAINMENT AREA RADIATION MONITORS

The inspectors identified a Severity Level IV NCV of 10 CFR 50.73(a)(2)(v) when licensee personnel failed to report a condition that resulted in a loss of safety function when both containment area radiation monitors were declared inoperable. Specifically, on May 24, 2011, the licensee identified that when reducing reactor power with the isolation setpoints for containment area radiation monitors 1/2AR11J and 1/2AR12J constant and background radiation levels decreasing, the TS setpoint limit for containment area radiation monitors were exceeded and could have prevented the fulfillment of a safety function to automatically isolate containment. The inspectors determined that although this condition represented a loss of safety function in accordance with the 10 CFR 50.73 reporting requirements and NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 10 CFR 50.73," Revision 2, the condition was not reported as required. This issue was entered into the licensee's CAP as IR 1463675. Corrective actions included an action to report this event in accordance with NRC requirements.

Inspection Report# : [2012005](#) (pdf)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Means to Detect Leak in Emergency Core Cooling Flow Path

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to provide a means to detect and isolate a leak in the

emergency core cooling flow path within 30 minutes, which was contrary to the Updated Final Safety Analysis Report. Specifically, the licensee failed to provide a means to detect and isolate a leak within 30 minutes in that neither sump alarms nor radiation monitors were provided for the safety injection pump rooms. The licensee entered the issue into their corrective action program and planned to evaluate options for modifications to address detection of emergency core cooling system leakage.

The performance deficiency was determined to be more than minor because it was associated with the Barrier Integrity cornerstone attribute of Design Control and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to provide a means to detect and isolate a leak in the emergency core cooling flow path within 30 minutes could result in a delayed isolation of such a leak after an accident and result in a greater radionuclide release to the auxiliary building and the environment. The finding screened as very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : February 28, 2013

Byron 2

1Q/2013 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Mar 31, 2013

Identified By: NRC

Item Type: FIN Finding

FAILURE TO PROPERLY SCOPE ALL PERTINENT EXTERNAL FLOOD PROTECTION FEATURES INTO WALKDOWN LISTS IN ACCORDANCE WITH INDUSTRY GUIDANCE NEI 12-07

The inspectors identified a finding of very low safety significance (Green) when licensee personnel failed to develop inspection lists that included all external flood protection features credited in current licensing bases (CLB) documents as specified in Nuclear Energy Institute (NEI) 12-07, "Guidelines for Performing Walkdowns of Plant Flood Protection Features." Specifically, concrete flood barriers in the fuel handling building (FHB) that protected safety-related equipment in the auxiliary building and flood barriers for the spent fuel pool cooling pumps were not included in the licensee's flooding inspection lists, although these passive components were a critical element of the licensee's flood mitigation strategy. The licensee entered this issue into their CAP as IR 1466355. Corrective actions included plans to perform an inspection of the NRC-identified features that were omitted from the inspection lists and an extent-of-condition review.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Protection Against External Factors (Flood Hazard) attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors), the finding was of very low safety significance (Green). This finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because licensee personnel failed to properly apply human error prevention techniques such as peer checking and proper documentation of activities [H.4(a)].

Inspection Report# : [2013002](#) (*pdf*)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conforming 480/120 Vac Motor Control Contactors

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure qualified components were installed in the plant. Specifically, purchase orders did not specify the minimum pickup voltage for NEMA Size 1 through Size 4 safety-related motor-control contactors such that the installed contactors were not rated to function at the design basis minimum voltage. The licensee entered the issue into their corrective action program and based on a sample testing of contactors demonstrated there was adequate margin between the highest found minimum-pickup voltage and the

design basis pickup voltage.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System Cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, having installed contactors that may not function under degraded voltage conditions could affect the operability of multiple safety-related structures, systems and components during an event. The finding screened as of very low safety significance (Green) because the finding involved a design or qualification deficiency that did not result in a loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Verify the CCW System Capability to Withstand a Thermal Barrier Break

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure the component cooling water (CCW) system was capable of withstanding a reactor coolant pump thermal barrier break. Specifically, when assuming a single failure of the automatic isolation function, the licensee failed to evaluate the break effect on the CCW system during the 3 minutes postulated to isolate the leak. The licensee entered the issue into their corrective action program; verified the CCW system would be able to withstand the postulated event, and planned to perform a detailed evaluation of the effect of a thermal barrier break on the CCW system.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to evaluate the effect of the thermal barrier rupture on the CCW system created reasonable doubt whether the system would be capable of withstanding the applied forces of this event. The finding screened as very low safety significance (Green) because the design deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (pdf)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Non-Conservative Calibration Tolerance Limits for Electrical Relay Settings

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to specify in a design calculation the allowable relay setpoint calibration tolerances. Specifically, the acceptance criteria used in relay setting calibration procedures was not bounded by the relay setting design calculations. The licensee entered this finding into their corrective action program and verified the calibrated relay settings would still provide adequate electrical protection coordination capability.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to adequately evaluate the design requirements of the relay settings could have

resulted in a loss-of-relay coordination and could allow a fault on one piece of equipment to propagate to other safety-related equipment outside the designed isolation boundary. The finding screened as very low safety significance (Green) because the finding was design deficiency confirmed not to result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (*pdf*)

Significance:  Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Design Analyses Did Not Adequately Address Potential Flooding of the Auxiliary Building

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to adequately analyze potential design basis internal flooding events in the auxiliary building. Specifically, the licensee's analysis did not account for the possible single failure of an essential service water motor-operated isolation valve or its associated power supply, which would have prevented break isolation within 30 minutes. The licensee entered the issue into their corrective action program; verified essential service water piping in the auxiliary building would meet the "crack exclusion" pipe stress criteria, and planned to revise the flooding analysis.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to adequately analyze potential design basis internal flooding events in the auxiliary building would affect the capability of safety-related equipment to withstand the postulated event. The finding screened as very low safety significance (Green) because the design deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (*pdf*)

Barrier Integrity

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO SUBMIT A 10 CFR 50.73(A)(2)(V) REPORT FOR INOPERABLE CONTAINMENT AREA RADIATION MONITORS

The inspectors identified a Severity Level IV NCV of 10 CFR 50.73(a)(2)(v) when licensee personnel failed to report a condition that resulted in a loss of safety function when both containment area radiation monitors were declared inoperable. Specifically, on May 24, 2011, the licensee identified that when reducing reactor power with the isolation setpoints for containment area radiation monitors 1/2AR11J and 1/2AR12J constant and background radiation levels decreasing, the TS setpoint limit for containment area radiation monitors were exceeded and could have prevented the fulfillment of a safety function to automatically isolate containment. The inspectors determined that although this condition represented a loss of safety function in accordance with the 10 CFR 50.73 reporting requirements and NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 10 CFR 50.73," Revision 2, the condition was not reported as required. This issue was entered into the licensee's CAP as IR 1463675. Corrective actions included an

action to report this event in accordance with NRC requirements.

Inspection Report# : [2012005](#) (*pdf*)

Significance: G Jun 15, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Provide Means to Detect Leak in Emergency Core Cooling Flow Path

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to provide a means to detect and isolate a leak in the emergency core cooling flow path within 30 minutes, which was contrary to the Updated Final Safety Analysis Report. Specifically, the licensee failed to provide a means to detect and isolate a leak within 30 minutes in that neither sump alarms nor radiation monitors were provided for the safety injection pump rooms. The licensee entered the issue into their corrective action program and planned to evaluate options for modifications to address detection of emergency core cooling system leakage.

The performance deficiency was determined to be more than minor because it was associated with the Barrier Integrity cornerstone attribute of Design Control and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to provide a means to detect and isolate a leak in the emergency core cooling flow path within 30 minutes could result in a delayed isolation of such a leak after an accident and result in a greater radionuclide release to the auxiliary building and the environment. The finding screened as very low safety significance (Green) because the finding did not represent an actual open pathway in the physical integrity of reactor containment. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : [2012007](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

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Miscellaneous

Last modified : June 04, 2013

Byron 2

2Q/2013 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Mar 31, 2013

Identified By: NRC

Item Type: FIN Finding

FAILURE TO PROPERLY SCOPE ALL PERTINENT EXTERNAL FLOOD PROTECTION FEATURES INTO WALKDOWN LISTS IN ACCORDANCE WITH INDUSTRY GUIDANCE NEI 12-07

The inspectors identified a finding of very low safety significance (Green) when licensee personnel failed to develop inspection lists that included all external flood protection features credited in current licensing bases (CLB) documents as specified in Nuclear Energy Institute (NEI) 12-07, "Guidelines for Performing Walkdowns of Plant Flood Protection Features." Specifically, concrete flood barriers in the fuel handling building (FHB) that protected safety-related equipment in the auxiliary building and flood barriers for the spent fuel pool cooling pumps were not included in the licensee's flooding inspection lists, although these passive components were a critical element of the licensee's flood mitigation strategy. The licensee entered this issue into their CAP as IR 1466355. Corrective actions included plans to perform an inspection of the NRC-identified features that were omitted from the inspection lists and an extent-of-condition review.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Protection Against External Factors (Flood Hazard) attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors), the finding was of very low safety significance (Green). This finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because licensee personnel failed to properly apply human error prevention techniques such as peer checking and proper documentation of activities [H.4(a)].

Inspection Report# : [2013002](#) (*pdf*)

Barrier Integrity

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO SUBMIT A 10 CFR 50.73(A)(2)(V) REPORT FOR INOPERABLE CONTAINMENT AREA RADIATION MONITORS

The inspectors identified a Severity Level IV NCV of 10 CFR 50.73(a)(2)(v) when licensee personnel failed to report a condition that resulted in a loss of safety function when both containment area radiation monitors were declared inoperable. Specifically, on May 24, 2011, the licensee identified that when reducing reactor power with the isolation setpoints for containment area radiation monitors 1/2AR11J and 1/2AR12J constant and background radiation levels decreasing, the TS setpoint limit for containment area radiation monitors were exceeded and could have prevented the fulfillment of a safety function to automatically isolate containment. The inspectors determined that although this condition represented a loss of safety function in accordance with the 10 CFR 50.73 reporting requirements and NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 10 CFR 50.73," Revision 2, the condition was not reported as required. This issue was entered into the licensee's CAP as IR 1463675. Corrective actions included an action to report this event in accordance with NRC requirements.

Inspection Report# : [2012005](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

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Miscellaneous

Last modified : September 03, 2013

Byron 2

3Q/2013 Plant Inspection Findings

Initiating Events

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE IDENTIFICATION OF FIRE CURTAIN SPRINKLER DEGRADATION FOR AN AUXILIARY BUILDING STAIRWELL

The inspectors identified a finding of very low safety significance and an associated NCV of Byron Operating License (OL) Condition 2.C.6 for Unit 1 and 2.E for Unit 2 when licensee personnel failed to identify that a fire sprinkler curtain on Elevation 346' had degraded. Specifically, a ball valve had a twisted stem, which had the effect of indicating that an isolation valve was fully open, when in fact it was significantly closed. As part of their immediate corrective actions, the licensee declared the auxiliary building Elevation 346' fire curtain inoperable and initiated compensatory measures that included fire watches until the isolation valve stem was replaced. The licensee entered this issue into their CAP as IR 1560667, "Adverse Trend in Main Drain Results for 346 AB [Auxiliary Building] Sprinkler System."

The performance deficiency was determined to be more than minor because it was associated with the External Factors attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process," because it was associated with fire protection defense-in-depth strategies involving fire confinement. The inspectors determined that while flow to the sprinkler heads was significantly degraded, because less than 10 percent of the heads were obstructed or fouled, and no adjacent heads were fouled, the water curtain had a low degradation rating in accordance with IMC 0609, Appendix F, Attachment 2. Therefore, in accordance with IMC 0609, Appendix F, Attachment 1, Step 1.3.1.B, the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect in the CAP component of the PI&R cross-cutting area (P.1.(a)), because licensee personnel twice failed to identify the degraded sprinkler curtain and when NRC personnel identified the issue and informed licensee personnel, the issue was not entered into the licensee's CAP in a timely manner.

Inspection Report# : [2013007](#) (*pdf*)

Mitigating Systems

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY ASSESS OPERABILITY OF THE 2A EDG FOLLOWING POST-MODIFICATION TESTING

The inspectors identified a finding of very low safety significance and an associated NCV of Technical Specification

(TS) 3.8.1 when licensee personnel failed to properly assess the operability of the 2A emergency diesel generator (EDG) following a post-maintenance test that rendered the 2A EDG ventilation fan, a credited support system, incapable of performing its auto-start support system function for a period of two days. As part of the licensee's immediate corrective actions, a trip signal that prevented the 2A EDG fan from starting was reset. The licensee entered this issue into their CAP as IR 1252529, "2A DG [EDG] Vent Fan Trip Signal Not Reset."

The performance deficiency was determined to be more than minor because it was associated with the Configuration Control and Human Performance attributes of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, following an August 15, 2011, post-maintenance test of the 2A EDG room ventilation system high differential pressure (D/P) trip time delay, the licensee failed to implement the necessary procedural steps that ensured the high D/P trip signal was reset. This resulted in the 2A EDG room ventilation fan from auto-starting, resulting in the inoperability of the 2A EDG from August 15-17, 2011. The inspectors determined that this finding screened as having very low safety significance (Green) in accordance with IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," as it did not represent an actual loss of function of at least a single train of safety-related equipment for greater than its Technical Specification (TS) allowed outage time and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. This issue had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area (H.4(a)), because licensee personnel failed to use appropriate human performance techniques to ensure that work tasks were performed safely and individuals do not proceed in the face of uncertainty.

Inspection Report# : [2013007](#) (pdf)

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

ACCEPTANCE CRITERIA FOR BATTERY VOLTAGE IN TS SURVEILLANCE PROCEDURE FAILED TO ACCOUNT FOR TEST EQUIPMENT UNCERTAINTY

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," when licensee personnel failed to account for test instrument uncertainty in the acceptance criteria for TS Surveillance procedure 2BOSR 8.6.1-2, "125VDC [Volt Direct Current] ESF [Engineered Safety Feature] Battery Bank and Charger 212 Operability Weekly Surveillance." As part of the licensee's immediate corrective actions, the voltage of the affected battery charger was adjusted. The licensee also planned to perform a fleet-wide evaluation of the issue. The licensee entered this issue into their CAP as IR 0156440, "125 VDC Battery TS Surveillance Values."

The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the acceptance criteria for the battery voltage did not assure the availability of the safety-related direct current (DC) batteries that would meet the minimum voltage as required by the TSs. This finding screened as having very low safety significance, in accordance with Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings for At-Power," because it was a design deficiency confirmed not to result in a loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance. Specifically, the decision to not include the instrument uncertainty was made in 2003, as part of an evaluation for a previously identified issue.

Inspection Report# : [2013007](#) (pdf)

Significance: G Mar 31, 2013

Identified By: NRC

Item Type: FIN Finding

FAILURE TO PROPERLY SCOPE ALL PERTINENT EXTERNAL FLOOD PROTECTION FEATURES INTO WALKDOWN LISTS IN ACCORDANCE WITH INDUSTRY GUIDANCE NEI 12-07

The inspectors identified a finding of very low safety significance (Green) when licensee personnel failed to develop inspection lists that included all external flood protection features credited in current licensing bases (CLB) documents as specified in Nuclear Energy Institute (NEI) 12-07, "Guidelines for Performing Walkdowns of Plant Flood Protection Features." Specifically, concrete flood barriers in the fuel handling building (FHB) that protected safety-related equipment in the auxiliary building and flood barriers for the spent fuel pool cooling pumps were not included in the licensee's flooding inspection lists, although these passive components were a critical element of the licensee's flood mitigation strategy. The licensee entered this issue into their CAP as IR 1466355. Corrective actions included plans to perform an inspection of the NRC-identified features that were omitted from the inspection lists and an extent-of-condition review.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Protection Against External Factors (Flood Hazard) attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors), the finding was of very low safety significance (Green). This finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because licensee personnel failed to properly apply human error prevention techniques such as peer checking and proper documentation of activities [H.4(a)].

Inspection Report# : [2013002](#) (pdf)

Barrier Integrity

Significance: G Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO SUBMIT A 10 CFR 50.73(A)(2)(V) REPORT FOR INOPERABLE CONTAINMENT AREA RADIATION MONITORS

The inspectors identified a Severity Level IV NCV of 10 CFR 50.73(a)(2)(v) when licensee personnel failed to report a condition that resulted in a loss of safety function when both containment area radiation monitors were declared inoperable. Specifically, on May 24, 2011, the licensee identified that when reducing reactor power with the isolation setpoints for containment area radiation monitors 1/2AR11J and 1/2AR12J constant and background radiation levels decreasing, the TS setpoint limit for containment area radiation monitors were exceeded and could have prevented the fulfillment of a safety function to automatically isolate containment. The inspectors determined that although this condition represented a loss of safety function in accordance with the 10 CFR 50.73 reporting requirements and NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 10 CFR 50.73," Revision 2, the condition was not reported as required. This issue was entered into the licensee's CAP as IR 1463675. Corrective actions included an action to report this event in accordance with NRC requirements.

Inspection Report# : [2012005](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : December 03, 2013

Byron 2

4Q/2013 Plant Inspection Findings

Initiating Events

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Reactor Vessel Design Documents Not Updated to Reflect Unit 2 Missing Head Stud

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III "Design Control" for failure to maintain reactor vessel design specification and analysis up-to-date for the 53 stud vessel head configuration applicable to Unit 2. Specifically, the reactor vessel Design Specification and Design Analysis did not reflect the modified and stuck stud no. 11. The licensee entered this issue into their corrective action program (CAP) as Action Report (AR) 01578285.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered "Yes" to the More-than-Minor screening question "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to maintain the Unit 2 reactor vessel design specification and analysis caused them to be inaccurate and if these documents were subsequently relied on for future design changes, the vessel design may not be adequate to maintain structural integrity during design basis events resulting in a loss-of-coolant-accident. The inspectors performed a Phase 1 Significance Determination Process Screening, and evaluated this issue by application of questions 1 and 2. Questions No's 1 and 2 asked: if after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, the degradation prompting the reduction in the number of head studs and the licensee's failure to maintain the design analysis had not yet affected the ability of the reactor vessel to perform its design functions so the inspector answered these questions "No" and this issue screened as having very low risk significance. Inspectors determined that this finding is not indicative of current performance and no cross-cutting aspect was assigned.

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Corrosion Effects on the Unit 2 Reactor Vessel Not Monitored

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III "Design Control" for failure to maintain reactor vessel design specification and analysis up-to-date for the 53 stud vessel head configuration applicable to Unit 2. Specifically, the reactor vessel Design Specification and Design Analysis did not reflect the modified and stuck stud no. 11. The licensee entered this issue into their corrective action program (CAP) as Action Report (AR) 01578285.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to

limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered “Yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to maintain the Unit 2 reactor vessel design specification and analysis caused them to be inaccurate and if these documents were subsequently relied on for future design changes, the vessel design may not be adequate to maintain structural integrity during design basis events resulting in a loss-of-coolant-accident. The inspectors performed a Phase 1 Significance Determination Process Screening, and evaluated this issue by application of questions 1 and 2. Questions No’s 1 and 2 asked: if after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, the degradation prompting the reduction in the number of head studs and the licensee’s failure to maintain the design analysis had not yet affected the ability of the reactor vessel to perform its design functions so the inspector answered these questions “No” and this issue screened as having very low risk significance. Inspectors determined that this finding is not indicative of current performance and no cross-cutting aspect was assigned.

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Vessel Stress Analysis for Unit 2 Missing Head Stud

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III “Design Control” for failure to perform an adequate thermal-mechanical analysis to support operation with a missing Unit 2 head stud. Specifically, the licensee did not perform a complete set of analysis under operating, faulted and design conditions to confirm the associated stud and flange stresses remained within the Code allowable limits. Consequently, the licensee did not recognize that the bearing stress under the head stud nuts at the vessel flange face exceeded the Code allowable stress. The licensee entered this issue into their CAP as IR 01578717.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered “Yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to perform an adequate thermal-mechanical analysis, could result in the inability of the reactor vessel to meet the design basis operating transient without a LOCA. The inspectors performed a Phase 1 Significance Determination Process Screening and evaluated this issue by application of questions 1 and 2. Questions 1 and 2 asked if; after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant leak rate for a small loss-of-coolant-accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, because of the available margins in the flange material strength, the inspector answered these questions “No” and this issue screened as having very low risk significance. This finding has a cross-cutting aspect in the area of Human Performance Resources, because the licensee did not have complete, accurate and up-to-date design documentation, procedures, and work packages. Specifically, the licensee failed to ensure the applicable ASME Code Section III design limit for bearing stress (design basis) was correctly translated into a design document (EC 379850). (H.2(c)).

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE IDENTIFICATION OF FIRE CURTAIN SPRINKLER DEGRADATION FOR AN AUXILIARY BUILDING STAIRWELL

The inspectors identified a finding of very low safety significance and an associated NCV of Byron Operating License (OL) Condition 2.C.6 for Unit 1 and 2.E for Unit 2 when licensee personnel failed to identify that a fire sprinkler curtain on Elevation 346' had degraded. Specifically, a ball valve had a twisted stem, which had the effect of indicating that an isolation valve was fully open, when in fact it was significantly closed. As part of their immediate corrective actions, the licensee declared the auxiliary building Elevation 346' fire curtain inoperable and initiated compensatory measures that included fire watches until the isolation valve stem was replaced. The licensee entered this issue into their CAP as IR 1560667, "Adverse Trend in Main Drain Results for 346 AB [Auxiliary Building] Sprinkler System."

The performance deficiency was determined to be more than minor because it was associated with the External Factors attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process," because it was associated with fire protection defense-in-depth strategies involving fire confinement. The inspectors determined that while flow to the sprinkler heads was significantly degraded, because less than 10 percent of the heads were obstructed or fouled, and no adjacent heads were fouled, the water curtain had a low degradation rating in accordance with IMC 0609, Appendix F, Attachment 2. Therefore, in accordance with IMC 0609, Appendix F, Attachment 1, Step 1.3.1.B, the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect in the CAP component of the PI&R cross-cutting area (P.1.(a)), because licensee personnel twice failed to identify the degraded sprinkler curtain and when NRC personnel identified the issue and informed licensee personnel, the issue was not entered into the licensee's CAP in a timely manner.

Inspection Report# : [2013007](#) (pdf)

Mitigating Systems

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Emergency Service Water Blowdown Isolation Valves Were Not Tested

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to demonstrate the ability to isolate the emergency service water blowdown as credited in analysis described in the Updated Final Safety Analysis Report. Specifically, the licensee was not periodically testing the active function of the blowdown isolation valves. This finding was entered into the licensee's Corrective Action Program, in part, to periodically test the closing function of the blowdown isolation valves.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of the ultimate heat sink to respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it did not result in the loss of operability or functionality. Specifically, the licensee reviewed recent history of the affected piping system and determined it opportunistically cycled the valves without incidents. The inspectors did not identify a cross-cutting

aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Intake Structure Silt Level Acceptance Criteria Were Non-Conservative

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to develop appropriate intake structure silt level acceptance criteria. Specifically, the licensee used a non-conservative river water low level value as an input when developing silt level acceptance criteria. This finding was entered into the licensee's CAP to correct the acceptance criteria and revise the affected surveillance procedures.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of the ultimate heat sink to respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it did not result in the loss of operability or functionality. Specifically, a historic review did not find an example where the as-found silt level resulted in an inoperable condition. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Preventative Maintenance Procedure Replacement Schedules for Essential Service Water Makeup Pump Diesel Engine Hoses

. Inspectors identified a finding of very low safety significance and associated Non-Cited Violation of TS 5.4.1, "Procedures," for failure to establish and implement a preventive maintenance schedule to replace hoses on SX Make Up pump diesel engine. Specifically, the licensee failed to implement preventive maintenance procedures that require periodic replacement of hoses on pre-established schedules in accordance with vendor recommendation and corporate Performance Centered Maintenance (PCM) template. The finding was entered into the licensee's Corrective Actions Program, in part, to evaluate the current maintenance strategy for maintaining flexible hoses on the SX make-up pump diesel engines.

The performance deficiency was determined to be more than minor because if left uncorrected the failure of SX Make up pump engine hoses could result in the inoperability of the SX Make up pumps. The performance deficiency also screened as more than minor because it affected the Procedure Quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as being of very low safety significance because it did not result in the loss of operability or functionality. Specifically, the licensee has reviewed the recent history of hose inspections and instances that required hose replacement and determined no failures have occurred that resulted in an inoperable condition. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY ASSESS OPERABILITY OF THE 2A EDG FOLLOWING POST-MODIFICATION TESTING

The inspectors identified a finding of very low safety significance and an associated NCV of Technical Specification (TS) 3.8.1 when licensee personnel failed to properly assess the operability of the 2A emergency diesel generator (EDG) following a post-maintenance test that rendered the 2A EDG ventilation fan, a credited support system, incapable of performing its auto-start support system function for a period of two days. As part of the licensee's immediate corrective actions, a trip signal that prevented the 2A EDG fan from starting was reset. The licensee entered this issue into their CAP as IR 1252529, "2A DG [EDG] Vent Fan Trip Signal Not Reset."

The performance deficiency was determined to be more than minor because it was associated with the Configuration Control and Human Performance attributes of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, following an August 15, 2011, post-maintenance test of the 2A EDG room ventilation system high differential pressure (D/P) trip time delay, the licensee failed to implement the necessary procedural steps that ensured the high D/P trip signal was reset. This resulted in the 2A EDG room ventilation fan from auto-starting, resulting in the inoperability of the 2A EDG from August 15-17, 2011. The inspectors determined that this finding screened as having very low safety significance (Green) in accordance with IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," as it did not represent an actual loss of function of at least a single train of safety-related equipment for greater than its Technical Specification (TS) allowed outage time and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. This issue had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area (H.4(a)), because licensee personnel failed to use appropriate human performance techniques to ensure that work tasks were performed safely and individuals do not proceed in the face of uncertainty.

Inspection Report# : [2013007](#) (pdf)

Significance: G Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

ACCEPTANCE CRITERIA FOR BATTERY VOLTAGE IN TS SURVEILLANCE PROCEDURE FAILED TO ACCOUNT FOR TEST EQUIPMENT UNCERTAINTY

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," when licensee personnel failed to account for test instrument uncertainty in the acceptance criteria for TS Surveillance procedure 2BOSR 8.6.1-2, "125VDC [Volt Direct Current] ESF [Engineered Safety Feature] Battery Bank and Charger 212 Operability Weekly Surveillance." As part of the licensee's immediate corrective actions, the voltage of the affected battery charger was adjusted. The licensee also planned to perform a fleet-wide evaluation of the issue. The licensee entered this issue into their CAP as IR 0156440, "125 VDC Battery TS Surveillance Values."

The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the acceptance criteria for the battery voltage did not assure the availability of the safety-related direct current (DC) batteries that would meet the minimum voltage as required by the TSs. This finding screened as having very low safety significance, in accordance with Exhibit 2 of IMC 0609,

Appendix A, “The Significance Determination Process (SDP) for Findings for At-Power,” because it was a design deficiency confirmed not to result in a loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance. Specifically, the decision to not include the instrument uncertainty was made in 2003, as part of an evaluation for a previously identified issue.

Inspection Report# : [2013007](#) (*pdf*)

Significance:  Jun 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO ESTABLISH A PROCEDURE TO CONTROL THE SPENT FUEL POOL COOLING SYSTEM

A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.4.1 was self-revealed when a configuration control error during a local leak rate test (LLRT) resulted in the inadvertent draining of the spent fuel pool (SFP). The licensee entered this issue into their CAP as IR 1506862, “SFP Level Reduced.” Licensee corrective actions included isolating the leak and restoring SFP level to normal.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Human Performance attribute of the Barrier Integrity Cornerstone and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accident or events. The finding was screened in accordance with IMC 0609, Attachment 4, “Phase 1 – Initial Screening and Characterization of Findings,” and was determined to be of very low safety significance since the finding was not associated with the loss of cooling to the SFP that would have precluded restoration prior to boiling, a fuel handling error, or loss of SFP inventory below the minimum analyzed level limit specified in the site-specific licensing basis. This finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because operators did not use human error prevention techniques commensurate with the risk of the assigned task nor did personnel stop work in the face of uncertainty (H.4.a).

Inspection Report# : [2013003](#) (*pdf*)

Significance:  Mar 31, 2013

Identified By: NRC

Item Type: FIN Finding

FAILURE TO PROPERLY SCOPE ALL PERTINENT EXTERNAL FLOOD PROTECTION FEATURES INTO WALKDOWN LISTS IN ACCORDANCE WITH INDUSTRY GUIDANCE NEI 12-07

The inspectors identified a finding of very low safety significance (Green) when licensee personnel failed to develop inspection lists that included all external flood protection features credited in current licensing bases (CLB) documents as specified in Nuclear Energy Institute (NEI) 12-07, “Guidelines for Performing Walkdowns of Plant Flood Protection Features.” Specifically, concrete flood barriers in the fuel handling building (FHB) that protected safety-related equipment in the auxiliary building and flood barriers for the spent fuel pool cooling pumps were not included in the licensee’s flooding inspection lists, although these passive components were a critical element of the licensee’s flood mitigation strategy. The licensee entered this issue into their CAP as IR 1466355. Corrective actions included plans to perform an inspection of the NRC-identified features that were omitted from the inspection lists and an extent-of-condition review.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Protection Against External Factors (Flood Hazard) attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Because the finding did not involve the loss

or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors), the finding was of very low safety significance (Green). This finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because licensee personnel failed to properly apply human error prevention techniques such as peer checking and proper documentation of activities [H.4(a)].

Inspection Report# : [2013002](#) (*pdf*)

Barrier Integrity

Significance: G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Analytical Bases for PTL Curves Not Maintained Consistent With Unit 2 Head Stud Configuration

Inspectors identified a finding of very low safety significance and an associated NCV of TS 5.6.6, Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR), for failure to maintain the analytical basis for deriving the pressure temperature limit curves consistent with the Unit 2 vessel head stud configuration. Specifically, the analytical model used in WCAP-16143 “Reactor Vessel Closure Head/Vessel Flange Requirements Evaluation for Byron/Braidwood Units 1 and 2” was based the original closure head configuration and did not represent the modified closure head configuration (53 head studs) applicable to the Unit 2 reactor vessel. The licensee entered this issue into their CAP as AR 01578276.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Barrier Integrity Cornerstone and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accident or events. The inspectors also answered “yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, if left uncorrected, continued operation without a correct stress analysis to support the approved pressure temperature limit curves could have allowed the reactor to operate at a pressure and temperature that increased the chance for a brittle fracture of the vessel under a pressurized thermal shock event. The inspectors performed a Phase 1 Significance Determination Process Screening and selected the box under the Reactor Coolant System Boundary (e.g. pressurized thermal shock issues) which required a detailed risk evaluation. An NRC Region III senior reactor analyst performed a detailed risk evaluation of this finding. A potential increase in the probability for vessel failure would exist if the plant was operated in the unacceptable pressure-temperature regions and a pressurized thermal shock event occurred. Based on the licensee and supporting vendor assessments which concluded that no substantial increase in vessel stresses will occur due to operation with 53 head studs, the driving force for crack propagation (e.g. K1) will remain essentially unchanged. However, to bound the delta risk evaluation, it was assumed that the initiating event frequency for a reactor vessel failure increased by 10 percent. From the Byron Standardized Plant Analysis Risk model version 8.21, the initiating event frequency for reactor vessel failure from any cause was 1E-7/yr. Core damage is expected to occur if reactor vessel failure occurs. The exposure time for the finding was the maximum of one year. Thus, a bounding risk assessment yields a delta risk of 1E 8/yr. Therefore, based on the detailed risk evaluation, this finding is of very low risk significance. This finding has a cross-cutting aspect in the area of Human Performance Decision Making, because the licensee did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed. In this case, the licensee staff made a non-conservative assumption that the 10 CFR 50.59 process could be applied to authorize a change in the WCAP 16143 analysis and to not seek prior NRC approval (H.1 (b)).

Inspection Report# : [2013005](#) (pdf)

Significance:  Jun 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

INACCURATE RISK ASSESSMENT

A finding of very low safety significance and an associated NCV of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was identified by the inspectors when licensee personnel removed both the 2B and 2D Reactor Containment Fan Coolers (RCFCs) from service without entering an elevated on-line risk status (Yellow) as required by licensee procedure WC-BY-101-1006, "On-Line Risk Management and Assessment." The licensee entered this issue into their Corrective Action Program (CAP) as Issue Report (IR) 01519964, "2B and 2D RCFC OLR [On-Line Risk] Not Communicated." As part of the licensee's corrective actions, on-line risk was revised to accurately reflect the removal of the 2B and 2D RCFCs from service.

The inspectors determined that the performance deficiency was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor Issues," Example 7(e) that identified a failure to perform an adequate risk assessment when required by 10 CFR 50.65(a)(4) was not minor if the overall elevated plant risk placed the plant into a higher risk category established by the licensee. The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." In accordance with IMC 0609, Appendix K, and because the calculated Incremental Core Damage Probability Deficit (ICDPD) was not greater than 1E-6, the finding was determined to be of very low safety significance. This finding had a cross-cutting aspect in the Work Control component of the Human Performance cross-cutting area because coordination efforts between the departments responsible for evaluating and communicating on-line risk failed to identify and communicate a risk increase associated with maintenance on the 2B and 2D RCFCs (H.3.b).

Inspection Report# : [2013003](#) (pdf)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports

may be viewed.

Miscellaneous

Last modified : February 24, 2014

Byron 2

1Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY IMPLEMENT A COMPENSATORY FIRE WATCH AS REQUIRED BY THE FIRE PROTECTION PROGRAM

A finding with two examples of very low safety significance and associated NCV of Technical Specification 5.4.1.c was self-revealed when required compensatory fire watches were discovered to have been terminated while the fire systems were still impaired. Specifically, the licensee failed to maintain compensatory fire watches for Fire Zone 3.1-1, "Unit 1 Electrical Cable Tunnel" and for Fire Zones 10.1-2 "2B Diesel Fuel Oil Storage Room" and 10.2-2 "2A Diesel Fuel Oil Storage Room" required by procedure OP-MW-201-007 and as described in Technical Requirements Manual limiting conditions for operations.

The inspectors determined that this finding was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the finding was associated with the Initiating Events Cornerstone attribute of Protection Against External Factors (Fire) and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations.

Specifically, required fire watches established as compensatory measures should have been maintained for the duration of the work activity so that the sites ability to promptly detect and suppress a fire would be maintained. The inspectors evaluated this issue in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings." In Table 3 of Attachment 4, "SDP Appendix Router," the inspectors answered "Yes" to Question E.2, "Does the finding involve:...(2) Fixed fire protection systems....?" Therefore, the inspectors continued the risk evaluation using IMC 0609 Appendix F, "Fire Protection Significance Determination Process." Due to the equipment located in each of the affected fire zones, the two examples were evaluated independently. One example screened to Green using the questions under Task 1.4.2 for fixed fire protections systems. The senior reactor analyst performed a quantitative Phase 2 evaluation and determined the issue to be Green. The inspectors determined that a principle contributor to the finding was that the organization did not implement a process for planning, implementing, and executing concurrent work activities that ensured the required compensatory actions were maintained such that nuclear safety was the overriding priority (WP.1). As a result, the inspectors assigned a cross-cutting aspect of Work Management (H.5) to the finding.

Inspection Report# : [2014002](#) (*pdf*)

Significance: G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Reactor Vessel Design Documents Not Updated to Reflect Unit 2 Missing Head Stud

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III "Design Control" for failure to maintain reactor vessel design specification and analysis up-to-date for the 53 stud vessel head configuration applicable to Unit 2. Specifically, the reactor vessel Design Specification and Design Analysis did not reflect the modified and stuck stud no. 11. The licensee entered this issue into their corrective action program (CAP) as Action Report (AR) 01578285.

The inspectors determined that the performance deficiency was more than minor because it was associated with the

Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered “Yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to maintain the Unit 2 reactor vessel design specification and analysis caused them to be inaccurate and if these documents were subsequently relied on for future design changes, the vessel design may not be adequate to maintain structural integrity during design basis events resulting in a loss-of-coolant-accident. The inspectors performed a Phase 1 Significance Determination Process Screening, and evaluated this issue by application of questions 1 and 2. Questions No’s 1 and 2 asked: if after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, the degradation prompting the reduction in the number of head studs and the licensee’s failure to maintain the design analysis had not yet affected the ability of the reactor vessel to perform its design functions so the inspector answered these questions “No” and this issue screened as having very low risk significance. Inspectors determined that this finding is not indicative of current performance and no cross-cutting aspect was assigned.

Inspection Report# : [2013005](#) (pdf)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Corrosion Effects on the Unit 2 Reactor Vessel Not Monitored

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III “Design Control” for failure to maintain reactor vessel design specification and analysis up-to-date for the 53 stud vessel head configuration applicable to Unit 2. Specifically, the reactor vessel Design Specification and Design Analysis did not reflect the modified and stuck stud no. 11. The licensee entered this issue into their corrective action program (CAP) as Action Report (AR) 01578285.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered “Yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to maintain the Unit 2 reactor vessel design specification and analysis caused them to be inaccurate and if these documents were subsequently relied on for future design changes, the vessel design may not be adequate to maintain structural integrity during design basis events resulting in a loss-of-coolant-accident. The inspectors performed a Phase 1 Significance Determination Process Screening, and evaluated this issue by application of questions 1 and 2. Questions No’s 1 and 2 asked: if after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, the degradation prompting the reduction in the number of head studs and the licensee’s failure to maintain the design analysis had not yet affected the ability of the reactor vessel to perform its design functions so the inspector answered these questions “No” and this issue screened as having very low risk significance. Inspectors determined that this finding is not indicative of current performance and no cross-cutting aspect was assigned.

Inspection Report# : [2013005](#) (pdf)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Vessel Stress Analysis for Unit 2 Missing Head Stud

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III "Design Control" for failure to perform an adequate thermal-mechanical analysis to support operation with a missing Unit 2 head stud. Specifically, the licensee did not perform a complete set of analysis under operating, faulted and design conditions to confirm the associated stud and flange stresses remained within the Code allowable limits. Consequently, the licensee did not recognize that the bearing stress under the head stud nuts at the vessel flange face exceeded the Code allowable stress. The licensee entered this issue into their CAP as IR 01578717.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered "Yes" to the More-than-Minor screening question "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to perform an adequate thermal-mechanical analysis, could result in the inability of the reactor vessel to meet the design basis operating transient without a LOCA. The inspectors performed a Phase 1 Significance Determination Process Screening and evaluated this issue by application of questions 1 and 2. Questions 1 and 2 asked if, after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant leak rate for a small loss-of-coolant-accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, because of the available margins in the flange material strength, the inspector answered these questions "No" and this issue screened as having very low risk significance. This finding has a cross-cutting aspect in the area of Human Performance Resources, because the licensee did not have complete, accurate and up-to-date design documentation, procedures, and work packages. Specifically, the licensee failed to ensure the applicable ASME Code Section III design limit for bearing stress (design basis) was correctly translated into a design document (EC 379850). (H.2(c)).

Inspection Report# : [2013005](#) (pdf)

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE IDENTIFICATION OF FIRE CURTAIN SPRINKLER DEGRADATION FOR AN AUXILIARY BUILDING STAIRWELL

The inspectors identified a finding of very low safety significance and an associated NCV of Byron Operating License (OL) Condition 2.C.6 for Unit 1 and 2.E for Unit 2 when licensee personnel failed to identify that a fire sprinkler curtain on Elevation 346' had degraded. Specifically, a ball valve had a twisted stem, which had the effect of indicating that an isolation valve was fully open, when in fact it was significantly closed. As part of their immediate corrective actions, the licensee declared the auxiliary building Elevation 346' fire curtain inoperable and initiated compensatory measures that included fire watches until the isolation valve stem was replaced. The licensee entered this issue into their CAP as IR 1560667, "Adverse Trend in Main Drain Results for 346 AB [Auxiliary Building] Sprinkler System."

The performance deficiency was determined to be more than minor because it was associated with the External Factors attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process," because it was associated with fire protection defense-in-depth strategies involving fire confinement. The inspectors determined that while flow to the sprinkler heads was significantly degraded, because less than 10 percent of the heads were obstructed or fouled, and

no adjacent heads were fouled, the water curtain had a low degradation rating in accordance with IMC 0609, Appendix F, Attachment 2. Therefore, in accordance with IMC 0609, Appendix F, Attachment 1, Step 1.3.1.B, the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect in the CAP component of the PI&R cross-cutting area (P.1.(a)), because licensee personnel twice failed to identify the degraded sprinkler curtain and when NRC personnel identified the issue and informed licensee personnel, the issue was not entered into the licensee's CAP in a timely manner.

Inspection Report# : [2013007](#) (*pdf*)

Mitigating Systems

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Emergency Service Water Blowdown Isolation Valves Were Not Tested

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to demonstrate the ability to isolate the emergency service water blowdown as credited in analysis described in the Updated Final Safety Analysis Report. Specifically, the licensee was not periodically testing the active function of the blowdown isolation valves. This finding was entered into the licensee's Corrective Action Program, in part, to periodically test the closing function of the blowdown isolation valves.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of the ultimate heat sink to respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it did not result in the loss of operability or functionality. Specifically, the licensee reviewed recent history of the affected piping system and determined it opportunistically cycled the valves without incidents. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Intake Structure Silt Level Acceptance Criteria Were Non-Conservative

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to develop appropriate intake structure silt level acceptance criteria. Specifically, the licensee used a non-conservative river water low level value as an input when developing silt level acceptance criteria. This finding was entered into the licensee's CAP to correct the acceptance criteria and revise the affected surveillance procedures.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of the ultimate heat sink to respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it did not result in the loss of operability or functionality. Specifically, a historic review did not find an example where the as-found silt level

resulted in an inoperable condition. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (*pdf*)

Significance: G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Preventative Maintenance Procedure Replacement Schedules for Essential Service Water Makeup Pump Diesel Engine Hoses

. Inspectors identified a finding of very low safety significance and associated Non-Cited Violation of TS 5.4.1, "Procedures," for failure to establish and implement a preventive maintenance schedule to replace hoses on SX Make Up pump diesel engine. Specifically, the licensee failed to implement preventive maintenance procedures that require periodic replacement of hoses on pre-established schedules in accordance with vendor recommendation and corporate Performance Centered Maintenance (PCM) template. The finding was entered into the licensee's Corrective Actions Program, in part, to evaluate the current maintenance strategy for maintaining flexible hoses on the SX make-up pump diesel engines.

The performance deficiency was determined to be more than minor because if left uncorrected the failure of SX Make up pump engine hoses could result in the inoperability of the SX Make up pumps. The performance deficiency also screened as more than minor because it affected the Procedure Quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as being of very low safety significance because it did not result in the loss of operability or functionality. Specifically, the licensee has reviewed the recent history of hose inspections and instances that required hose replacement and determined no failures have occurred that resulted in an inoperable condition. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (*pdf*)

Significance: G Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY ASSESS OPERABILITY OF THE 2A EDG FOLLOWING POST-MODIFICATION TESTING

The inspectors identified a finding of very low safety significance and an associated NCV of Technical Specification (TS) 3.8.1 when licensee personnel failed to properly assess the operability of the 2A emergency diesel generator (EDG) following a post-maintenance test that rendered the 2A EDG ventilation fan, a credited support system, incapable of performing its auto-start support system function for a period of two days. As part of the licensee's immediate corrective actions, a trip signal that prevented the 2A EDG fan from starting was reset. The licensee entered this issue into their CAP as IR 1252529, "2A DG [EDG] Vent Fan Trip Signal Not Reset."

The performance deficiency was determined to be more than minor because it was associated with the Configuration Control and Human Performance attributes of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, following an August 15, 2011, post-maintenance test of the 2A EDG room ventilation system high differential pressure (D/P) trip time delay, the licensee failed to implement the necessary procedural steps that ensured the high D/P trip signal was reset. This resulted in the 2A EDG room ventilation fan from auto-starting, resulting in the inoperability of the 2A EDG from August 15-17, 2011. The inspectors determined that this finding screened as having very low safety significance (Green) in accordance with IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power,"

Exhibit 2, “Mitigating Systems Screening Questions,” as it did not represent an actual loss of function of at least a single train of safety-related equipment for greater than its Technical Specification (TS) allowed outage time and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee’s maintenance rule program for greater than 24 hours. This issue had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area (H.4(a)), because licensee personnel failed to use appropriate human performance techniques to ensure that work tasks were performed safely and individuals do not proceed in the face of uncertainty.

Inspection Report# : [2013007](#) (pdf)

Significance: G Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

ACCEPTANCE CRITERIA FOR BATTERY VOLTAGE IN TS SURVEILLANCE PROCEDURE FAILED TO ACCOUNT FOR TEST EQUIPMENT UNCERTAINTY

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” when licensee personnel failed to account for test instrument uncertainty in the acceptance criteria for TS Surveillance procedure 2BOSR 8.6.1-2, “125VDC [Volt Direct Current] ESF [Engineered Safety Feature] Battery Bank and Charger 212 Operability Weekly Surveillance.” As part of the licensee’s immediate corrective actions, the voltage of the affected battery charger was adjusted. The licensee also planned to perform a fleet-wide evaluation of the issue. The licensee entered this issue into their CAP as IR 0156440, “125 VDC Battery TS Surveillance Values.”

The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the acceptance criteria for the battery voltage did not assure the availability of the safety-related direct current (DC) batteries that would meet the minimum voltage as required by the TSs. This finding screened as having very low safety significance, in accordance with Exhibit 2 of IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings for At-Power,” because it was a design deficiency confirmed not to result in a loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance. Specifically, the decision to not include the instrument uncertainty was made in 2003, as part of an evaluation for a previously identified issue.

Inspection Report# : [2013007](#) (pdf)

Significance: G Jun 30, 2013

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO ESTABLISH A PROCEDURE TO CONTROL THE SPENT FUEL POOL COOLING SYSTEM

A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.4.1 was self-revealed when a configuration control error during a local leak rate test (LLRT) resulted in the inadvertent draining of the spent fuel pool (SFP). The licensee entered this issue into their CAP as IR 1506862, “SFP Level Reduced.” Licensee corrective actions included isolating the leak and restoring SFP level to normal.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Human Performance attribute of the Barrier Integrity Cornerstone and adversely impacted the cornerstone objective of

providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accident or events. The finding was screened in accordance with IMC 0609, Attachment 4, “Phase 1 – Initial Screening and Characterization of Findings,” and was determined to be of very low safety significance since the finding was not associated with the loss of cooling to the SFP that would have precluded restoration prior to boiling, a fuel handling error, or loss of SFP inventory below the minimum analyzed level limit specified in the site-specific licensing basis. This finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because operators did not use human error prevention techniques commensurate with the risk of the assigned task nor did personnel stop work in the face of uncertainty (H.4.a).

Inspection Report# : [2013003](#) (pdf)

Barrier Integrity

Significance: G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Analytical Bases for PTL Curves Not Maintained Consistent With Unit 2 Head Stud Configuration

Inspectors identified a finding of very low safety significance and an associated NCV of TS 5.6.6, Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR), for failure to maintain the analytical basis for deriving the pressure temperature limit curves consistent with the Unit 2 vessel head stud configuration. Specifically, the analytical model used in WCAP-16143 “Reactor Vessel Closure Head/Vessel Flange Requirements Evaluation for Byron/Braidwood Units 1 and 2” was based the original closure head configuration and did not represent the modified closure head configuration (53 head studs) applicable to the Unit 2 reactor vessel. The licensee entered this issue into their CAP as AR 01578276.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Barrier Integrity Cornerstone and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accident or events. The inspectors also answered “yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, if left uncorrected, continued operation without a correct stress analysis to support the approved pressure temperature limit curves could have allowed the reactor to operate at a pressure and temperature that increased the chance for a brittle fracture of the vessel under a pressurized thermal shock event. The inspectors performed a Phase 1 Significance Determination Process Screening and selected the box under the Reactor Coolant System Boundary (e.g. pressurized thermal shock issues) which required a detailed risk evaluation. An NRC Region III senior reactor analyst performed a detailed risk evaluation of this finding. A potential increase in the probability for vessel failure would exist if the plant was operated in the unacceptable pressure-temperature regions and a pressurized thermal shock event occurred. Based on the licensee and supporting vendor assessments which concluded that no substantial increase in vessel stresses will occur due to operation with 53 head studs, the driving force for crack propagation (e.g. K1) will remain essentially unchanged. However, to bound the delta risk evaluation, it was assumed that the initiating event frequency for a reactor vessel failure increased by 10 percent. From the Byron Standardized Plant Analysis Risk model version 8.21, the initiating event frequency for reactor vessel failure from any cause was 1E-7/yr. Core damage is expected to occur if reactor vessel failure occurs. The exposure time for the finding was the maximum of one year. Thus, a bounding risk assessment yields a delta risk of 1E 8/yr. Therefore, based on the detailed risk evaluation, this finding is of very low risk significance. This finding has a cross-cutting aspect in the area of Human Performance Decision Making, because the licensee did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action was

safe in order to proceed. In this case, the licensee staff made a non-conservative assumption that the 10 CFR 50.59 process could be applied to authorize a change in the WCAP 16143 analysis and to not seek prior NRC approval (H.1 (b)).

Inspection Report# : [2013005](#) (*pdf*)

Significance: G Jun 30, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

INACCURATE RISK ASSESSMENT

A finding of very low safety significance and an associated NCV of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," was identified by the inspectors when licensee personnel removed both the 2B and 2D Reactor Containment Fan Coolers (RCFCs) from service without entering an elevated on-line risk status (Yellow) as required by licensee procedure WC-BY-101-1006, "On-Line Risk Management and Assessment." The licensee entered this issue into their Corrective Action Program (CAP) as Issue Report (IR) 01519964, "2B and 2D RCFC OLR [On-Line Risk] Not Communicated." As part of the licensee's corrective actions, on-line risk was revised to accurately reflect the removal of the 2B and 2D RCFCs from service.

The inspectors determined that the performance deficiency was more than minor because it was similar to IMC 0612, Appendix E, "Examples of Minor Issues," Example 7(e) that identified a failure to perform an adequate risk assessment when required by 10 CFR 50.65(a)(4) was not minor if the overall elevated plant risk placed the plant into a higher risk category established by the licensee. The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." In accordance with IMC 0609, Appendix K, and because the calculated Incremental Core Damage Probability Deficit (ICDPD) was not greater than 1E-6, the finding was determined to be of very low safety significance. This finding had a cross-cutting aspect in the Work Control component of the Human Performance cross-cutting area because coordination efforts between the departments responsible for evaluating and communicating on-line risk failed to identify and communicate a risk increase associated with maintenance on the 2B and 2D RCFCs (H.3.b).

Inspection Report# : [2013003](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission

has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Mar 31, 2009

Identified By: NRC

Item Type: AV Apparent Violation

Apparent Violation for Exelon Plants - (2009 Findings)

For apparent violation #1:

Contrary to the above, on March 31, 2009 Exelon Generation Company, LLC (Exelon) provided incomplete and inaccurate information on the status of its decommissioning funding, as required by 10 CFR 50.75 when it submitted the decommissioning funding status report. Specifically, the March 31, 2009, decommissioning funding status (DFS) report contained inaccurate and incomplete information regarding Exelon's compliance with the requirements of 10 CFR 50.75. The report stated that the amount listed for each of the reactors was determined in accordance with 10 CFR 50.75(b) and the applicable formulas of 10 CFR 50.75(c). However, for each of the 23 reactors, the amount reported was a discounted value that was less than the minimum required amount specified by 10 CFR 50.75(b) and (c). The report was material to the NRC because Exelon under-reported its certified decommissioning amounts by approximately \$4 billion, and the NRC staff evaluated the status of Exelon's decommissioning funds based on the inaccurate reports. After identifying the inaccurate information, the NRC required parent company guarantees before the staff could make its determination that there was reasonable assurance that funds will be available for the decommissioning process.

Inspection Report# : [2012012](#) (*pdf*)

Inspection Report# : [2013202](#) (*pdf*)

Significance: N/A Mar 31, 2009

Identified By: NRC

Item Type: AV Apparent Violation

Apparent Violation for Exelon Plants - 2 (2009 Findings)

For apparent violation #2:

Contrary to the above, on March 31, 2007, and March 31, 2005, Exelon Generation Company, LLC (Exelon) provided incomplete and inaccurate information on the status of its decommissioning funding, as required by 10 CFR 50.75 when it submitted the decommissioning funding status reports. Specifically, the March 31, 2007, and March 31, 2005, decommissioning funding status (DFS) reports contained inaccurate and incomplete information regarding Exelon's compliance with the requirements of 10 CFR 50.75. The reports stated that the amount listed for each of the reactors was determined in accordance with 10 CFR 50.75(b) and the applicable formulas of 10 CFR 50.75(c). However, in multiple instances, the amount reported was a discounted value that was less than the minimum required amount specified by 10 CFR 50.75(b) and (c). The reports were material to the NRC because Exelon under-reported its certified decommissioning amounts, and the NRC staff evaluated the status of Exelon's decommissioning funds based on the inaccurate reports. After identifying the inaccurate information, the NRC required parent company guarantees before the staff could make its determination that there was reasonable assurance that funds will be available for the decommissioning process.

Inspection Report# : [2012012](#) (*pdf*)

Inspection Report# : [2013202](#) (*pdf*)

Last modified : May 30, 2014

Byron 2

2Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY IMPLEMENT A COMPENSATORY FIRE WATCH AS REQUIRED BY THE FIRE PROTECTION PROGRAM

A finding with two examples of very low safety significance and associated NCV of Technical Specification 5.4.1.c was self-revealed when required compensatory fire watches were discovered to have been terminated while the fire systems were still impaired. Specifically, the licensee failed to maintain compensatory fire watches for Fire Zone 3.1-1, "Unit 1 Electrical Cable Tunnel" and for Fire Zones 10.1-2 "2B Diesel Fuel Oil Storage Room" and 10.2-2 "2A Diesel Fuel Oil Storage Room" required by procedure OP-MW-201-007 and as described in Technical Requirements Manual limiting conditions for operations.

The inspectors determined that this finding was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the finding was associated with the Initiating Events Cornerstone attribute of Protection Against External Factors (Fire) and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations. Specifically, required fire watches established as compensatory measures should have been maintained for the duration of the work activity so that the sites ability to promptly detect and suppress a fire would be maintained. The inspectors evaluated this issue in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings." In Table 3 of Attachment 4, "SDP Appendix Router," the inspectors answered "Yes" to Question E.2, "Does the finding involve:...(2) Fixed fire protection systems....?" Therefore, the inspectors continued the risk evaluation using IMC 0609 Appendix F, "Fire Protection Significance Determination Process." Due to the equipment located in each of the affected fire zones, the two examples were evaluated independently. One example screened to Green using the questions under Task 1.4.2 for fixed fire protections systems. The senior reactor analyst performed a quantitative Phase 2 evaluation and determined the issue to be Green. The inspectors determined that a principle contributor to the finding was that the organization did not implement a process for planning, implementing, and executing concurrent work activities that ensured the required compensatory actions were maintained such that nuclear safety was the overriding priority (WP.1). As a result, the inspectors assigned a cross-cutting aspect of Work Management (H.5) to the finding.

Inspection Report# : [2014002](#) (*pdf*)

Significance: G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Reactor Vessel Design Documents Not Updated to Reflect Unit 2 Missing Head Stud

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III "Design Control" for failure to maintain reactor vessel design specification and analysis up-to-date for the 53 stud vessel head configuration applicable to Unit 2. Specifically, the reactor vessel Design Specification and Design Analysis did not reflect the modified and stuck stud no. 11. The licensee entered this issue into their corrective action program (CAP) as Action Report (AR) 01578285.

The inspectors determined that the performance deficiency was more than minor because it was associated with the

Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered “Yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to maintain the Unit 2 reactor vessel design specification and analysis caused them to be inaccurate and if these documents were subsequently relied on for future design changes, the vessel design may not be adequate to maintain structural integrity during design basis events resulting in a loss-of-coolant-accident. The inspectors performed a Phase 1 Significance Determination Process Screening, and evaluated this issue by application of questions 1 and 2. Questions No’s 1 and 2 asked: if after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, the degradation prompting the reduction in the number of head studs and the licensee’s failure to maintain the design analysis had not yet affected the ability of the reactor vessel to perform its design functions so the inspector answered these questions “No” and this issue screened as having very low risk significance. Inspectors determined that this finding is not indicative of current performance and no cross-cutting aspect was assigned.

Inspection Report# : [2013005](#) (pdf)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Corrosion Effects on the Unit 2 Reactor Vessel Not Monitored

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III “Design Control” for failure to maintain reactor vessel design specification and analysis up-to-date for the 53 stud vessel head configuration applicable to Unit 2. Specifically, the reactor vessel Design Specification and Design Analysis did not reflect the modified and stuck stud no. 11. The licensee entered this issue into their corrective action program (CAP) as Action Report (AR) 01578285.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered “Yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to maintain the Unit 2 reactor vessel design specification and analysis caused them to be inaccurate and if these documents were subsequently relied on for future design changes, the vessel design may not be adequate to maintain structural integrity during design basis events resulting in a loss-of-coolant-accident. The inspectors performed a Phase 1 Significance Determination Process Screening, and evaluated this issue by application of questions 1 and 2. Questions No’s 1 and 2 asked: if after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, the degradation prompting the reduction in the number of head studs and the licensee’s failure to maintain the design analysis had not yet affected the ability of the reactor vessel to perform its design functions so the inspector answered these questions “No” and this issue screened as having very low risk significance. Inspectors determined that this finding is not indicative of current performance and no cross-cutting aspect was assigned.

Inspection Report# : [2013005](#) (pdf)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Vessel Stress Analysis for Unit 2 Missing Head Stud

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III "Design Control" for failure to perform an adequate thermal-mechanical analysis to support operation with a missing Unit 2 head stud. Specifically, the licensee did not perform a complete set of analysis under operating, faulted and design conditions to confirm the associated stud and flange stresses remained within the Code allowable limits. Consequently, the licensee did not recognize that the bearing stress under the head stud nuts at the vessel flange face exceeded the Code allowable stress. The licensee entered this issue into their CAP as IR 01578717.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered "Yes" to the More-than-Minor screening question "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to perform an adequate thermal-mechanical analysis, could result in the inability of the reactor vessel to meet the design basis operating transient without a LOCA. The inspectors performed a Phase 1 Significance Determination Process Screening and evaluated this issue by application of questions 1 and 2. Questions 1 and 2 asked if, after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant leak rate for a small loss-of-coolant-accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, because of the available margins in the flange material strength, the inspector answered these questions "No" and this issue screened as having very low risk significance. This finding has a cross-cutting aspect in the area of Human Performance Resources, because the licensee did not have complete, accurate and up-to-date design documentation, procedures, and work packages. Specifically, the licensee failed to ensure the applicable ASME Code Section III design limit for bearing stress (design basis) was correctly translated into a design document (EC 379850). (H.2(c)).

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE IDENTIFICATION OF FIRE CURTAIN SPRINKLER DEGRADATION FOR AN AUXILIARY BUILDING STAIRWELL

The inspectors identified a finding of very low safety significance and an associated NCV of Byron Operating License (OL) Condition 2.C.6 for Unit 1 and 2.E for Unit 2 when licensee personnel failed to identify that a fire sprinkler curtain on Elevation 346' had degraded. Specifically, a ball valve had a twisted stem, which had the effect of indicating that an isolation valve was fully open, when in fact it was significantly closed. As part of their immediate corrective actions, the licensee declared the auxiliary building Elevation 346' fire curtain inoperable and initiated compensatory measures that included fire watches until the isolation valve stem was replaced. The licensee entered this issue into their CAP as IR 1560667, "Adverse Trend in Main Drain Results for 346 AB [Auxiliary Building] Sprinkler System."

The performance deficiency was determined to be more than minor because it was associated with the External Factors attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process," because it was associated with fire protection defense-in-depth strategies involving fire confinement. The inspectors determined that while flow to the sprinkler heads was significantly degraded, because less than 10 percent of the heads were obstructed or fouled, and

no adjacent heads were fouled, the water curtain had a low degradation rating in accordance with IMC 0609, Appendix F, Attachment 2. Therefore, in accordance with IMC 0609, Appendix F, Attachment 1, Step 1.3.1.B, the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect in the CAP component of the PI&R cross-cutting area (P.1.(a)), because licensee personnel twice failed to identify the degraded sprinkler curtain and when NRC personnel identified the issue and informed licensee personnel, the issue was not entered into the licensee's CAP in a timely manner.

Inspection Report# : [2013007](#) (*pdf*)

Mitigating Systems

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Emergency Service Water Blowdown Isolation Valves Were Not Tested

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to demonstrate the ability to isolate the emergency service water blowdown as credited in analysis described in the Updated Final Safety Analysis Report. Specifically, the licensee was not periodically testing the active function of the blowdown isolation valves. This finding was entered into the licensee's Corrective Action Program, in part, to periodically test the closing function of the blowdown isolation valves.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of the ultimate heat sink to respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it did not result in the loss of operability or functionality. Specifically, the licensee reviewed recent history of the affected piping system and determined it opportunistically cycled the valves without incidents. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Intake Structure Silt Level Acceptance Criteria Were Non-Conservative

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to develop appropriate intake structure silt level acceptance criteria. Specifically, the licensee used a non-conservative river water low level value as an input when developing silt level acceptance criteria. This finding was entered into the licensee's CAP to correct the acceptance criteria and revise the affected surveillance procedures.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of the ultimate heat sink to respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it did not result in the loss of operability or functionality. Specifically, a historic review did not find an example where the as-found silt level

resulted in an inoperable condition. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Preventative Maintenance Procedure Replacement Schedules for Essential Service Water Makeup Pump Diesel Engine Hoses

. Inspectors identified a finding of very low safety significance and associated Non-Cited Violation of TS 5.4.1, “Procedures,” for failure to establish and implement a preventive maintenance schedule to replace hoses on SX Make Up pump diesel engine. Specifically, the licensee failed to implement preventive maintenance procedures that require periodic replacement of hoses on pre-established schedules in accordance with vendor recommendation and corporate Performance Centered Maintenance (PCM) template. The finding was entered into the licensee’s Corrective Actions Program, in part, to evaluate the current maintenance strategy for maintaining flexible hoses on the SX make-up pump diesel engines.

The performance deficiency was determined to be more than minor because if left uncorrected the failure of SX Make up pump engine hoses could result in the inoperability of the SX Make up pumps. The performance deficiency also screened as more than minor because it affected the Procedure Quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as being of very low safety significance because it did not result in the loss of operability or functionality. Specifically, the licensee has reviewed the recent history of hose inspections and instances that required hose replacement and determined no failures have occurred that resulted in an inoperable condition. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (*pdf*)

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY ASSESS OPERABILITY OF THE 2A EDG FOLLOWING POST-MODIFICATION TESTING

The inspectors identified a finding of very low safety significance and an associated NCV of Technical Specification (TS) 3.8.1 when licensee personnel failed to properly assess the operability of the 2A emergency diesel generator (EDG) following a post-maintenance test that rendered the 2A EDG ventilation fan, a credited support system, incapable of performing its auto-start support system function for a period of two days. As part of the licensee’s immediate corrective actions, a trip signal that prevented the 2A EDG fan from starting was reset. The licensee entered this issue into their CAP as IR 1252529, “2A DG [EDG] Vent Fan Trip Signal Not Reset.”

The performance deficiency was determined to be more than minor because it was associated with the Configuration Control and Human Performance attributes of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, following an August 15, 2011, post-maintenance test of the 2A EDG room ventilation system high differential pressure (D/P) trip time delay, the licensee failed to implement the necessary procedural steps that ensured the high D/P trip signal was reset. This resulted in the 2A EDG room ventilation fan from auto-starting, resulting in the inoperability of the 2A EDG from August 15-17, 2011. The inspectors determined that this finding screened as having very low safety significance (Green) in accordance with IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings at Power,”

Exhibit 2, “Mitigating Systems Screening Questions,” as it did not represent an actual loss of function of at least a single train of safety-related equipment for greater than its Technical Specification (TS) allowed outage time and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee’s maintenance rule program for greater than 24 hours. This issue had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area (H.4(a)), because licensee personnel failed to use appropriate human performance techniques to ensure that work tasks were performed safely and individuals do not proceed in the face of uncertainty.

Inspection Report# : [2013007](#) (*pdf*)

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

ACCEPTANCE CRITERIA FOR BATTERY VOLTAGE IN TS SURVEILLANCE PROCEDURE FAILED TO ACCOUNT FOR TEST EQUIPMENT UNCERTAINTY

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” when licensee personnel failed to account for test instrument uncertainty in the acceptance criteria for TS Surveillance procedure 2BOSR 8.6.1-2, “125VDC [Volt Direct Current] ESF [Engineered Safety Feature] Battery Bank and Charger 212 Operability Weekly Surveillance.” As part of the licensee’s immediate corrective actions, the voltage of the affected battery charger was adjusted. The licensee also planned to perform a fleet-wide evaluation of the issue. The licensee entered this issue into their CAP as IR 0156440, “125 VDC Battery TS Surveillance Values.”

The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the acceptance criteria for the battery voltage did not assure the availability of the safety-related direct current (DC) batteries that would meet the minimum voltage as required by the TSs. This finding screened as having very low safety significance, in accordance with Exhibit 2 of IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings for At-Power,” because it was a design deficiency confirmed not to result in a loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance. Specifically, the decision to not include the instrument uncertainty was made in 2003, as part of an evaluation for a previously identified issue.

Inspection Report# : [2013007](#) (*pdf*)

Barrier Integrity

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Analytical Bases for PTL Curves Not Maintained Consistent With Unit 2 Head Stud Configuration

Inspectors identified a finding of very low safety significance and an associated NCV of TS 5.6.6, Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR), for failure to maintain the analytical basis for

deriving the pressure temperature limit curves consistent with the Unit 2 vessel head stud configuration. Specifically, the analytical model used in WCAP-16143 “Reactor Vessel Closure Head/Vessel Flange Requirements Evaluation for Byron/Braidwood Units 1 and 2” was based the original closure head configuration and did not represent the modified closure head configuration (53 head studs) applicable to the Unit 2 reactor vessel. The licensee entered this issue into their CAP as AR 01578276.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Barrier Integrity Cornerstone and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accident or events. The inspectors also answered “yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, if left uncorrected, continued operation without a correct stress analysis to support the approved pressure temperature limit curves could have allowed the reactor to operate at a pressure and temperature that increased the chance for a brittle fracture of the vessel under a pressurized thermal shock event. The inspectors performed a Phase 1 Significance Determination Process Screening and selected the box under the Reactor Coolant System Boundary (e.g. pressurized thermal shock issues) which required a detailed risk evaluation. An NRC Region III senior reactor analyst performed a detailed risk evaluation of this finding. A potential increase in the probability for vessel failure would exist if the plant was operated in the unacceptable pressure-temperature regions and a pressurized thermal shock event occurred. Based on the licensee and supporting vendor assessments which concluded that no substantial increase in vessel stresses will occur due to operation with 53 head studs, the driving force for crack propagation (e.g. K1) will remain essentially unchanged. However, to bound the delta risk evaluation, it was assumed that the initiating event frequency for a reactor vessel failure increased by 10 percent. From the Byron Standardized Plant Analysis Risk model version 8.21, the initiating event frequency for reactor vessel failure from any cause was $1E-7$ /yr. Core damage is expected to occur if reactor vessel failure occurs. The exposure time for the finding was the maximum of one year. Thus, a bounding risk assessment yields a delta risk of $1E-8$ /yr. Therefore, based on the detailed risk evaluation, this finding is of very low risk significance. This finding has a cross-cutting aspect in the area of Human Performance Decision Making, because the licensee did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed. In this case, the licensee staff made a non-conservative assumption that the 10 CFR 50.59 process could be applied to authorize a change in the WCAP 16143 analysis and to not seek prior NRC approval (H.1 (b)).

Inspection Report# : [2013005](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : August 29, 2014

Byron 2

3Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY IMPLEMENT A COMPENSATORY FIRE WATCH AS REQUIRED BY THE FIRE PROTECTION PROGRAM

A finding with two examples of very low safety significance and associated NCV of Technical Specification 5.4.1.c was self-revealed when required compensatory fire watches were discovered to have been terminated while the fire systems were still impaired. Specifically, the licensee failed to maintain compensatory fire watches for Fire Zone 3.1-1, "Unit 1 Electrical Cable Tunnel" and for Fire Zones 10.1-2 "2B Diesel Fuel Oil Storage Room" and 10.2-2 "2A Diesel Fuel Oil Storage Room" required by procedure OP-MW-201-007 and as described in Technical Requirements Manual limiting conditions for operations.

The inspectors determined that this finding was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the finding was associated with the Initiating Events Cornerstone attribute of Protection Against External Factors (Fire) and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations. Specifically, required fire watches established as compensatory measures should have been maintained for the duration of the work activity so that the sites ability to promptly detect and suppress a fire would be maintained. The inspectors evaluated this issue in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings." In Table 3 of Attachment 4, "SDP Appendix Router," the inspectors answered "Yes" to Question E.2, "Does the finding involve:...(2) Fixed fire protection systems....?" Therefore, the inspectors continued the risk evaluation using IMC 0609 Appendix F, "Fire Protection Significance Determination Process." Due to the equipment located in each of the affected fire zones, the two examples were evaluated independently. One example screened to Green using the questions under Task 1.4.2 for fixed fire protections systems. The senior reactor analyst performed a quantitative Phase 2 evaluation and determined the issue to be Green. The inspectors determined that a principle contributor to the finding was that the organization did not implement a process for planning, implementing, and executing concurrent work activities that ensured the required compensatory actions were maintained such that nuclear safety was the overriding priority (WP.1). As a result, the inspectors assigned a cross-cutting aspect of Work Management (H.5) to the finding.

Inspection Report# : [2014002](#) (*pdf*)

Significance: G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Reactor Vessel Design Documents Not Updated to Reflect Unit 2 Missing Head Stud

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III "Design Control" for failure to maintain reactor vessel design specification and analysis up-to-date for the 53 stud vessel head configuration applicable to Unit 2. Specifically, the reactor vessel Design Specification and Design Analysis did not reflect the modified and stuck stud no. 11. The licensee entered this issue into their corrective action program (CAP) as Action Report (AR) 01578285.

The inspectors determined that the performance deficiency was more than minor because it was associated with the

Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered “Yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to maintain the Unit 2 reactor vessel design specification and analysis caused them to be inaccurate and if these documents were subsequently relied on for future design changes, the vessel design may not be adequate to maintain structural integrity during design basis events resulting in a loss-of-coolant-accident. The inspectors performed a Phase 1 Significance Determination Process Screening, and evaluated this issue by application of questions 1 and 2. Questions No’s 1 and 2 asked: if after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, the degradation prompting the reduction in the number of head studs and the licensee’s failure to maintain the design analysis had not yet affected the ability of the reactor vessel to perform its design functions so the inspector answered these questions “No” and this issue screened as having very low risk significance. Inspectors determined that this finding is not indicative of current performance and no cross-cutting aspect was assigned.

Inspection Report# : [2013005](#) (pdf)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Corrosion Effects on the Unit 2 Reactor Vessel Not Monitored

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III “Design Control” for failure to maintain reactor vessel design specification and analysis up-to-date for the 53 stud vessel head configuration applicable to Unit 2. Specifically, the reactor vessel Design Specification and Design Analysis did not reflect the modified and stuck stud no. 11. The licensee entered this issue into their corrective action program (CAP) as Action Report (AR) 01578285.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered “Yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to maintain the Unit 2 reactor vessel design specification and analysis caused them to be inaccurate and if these documents were subsequently relied on for future design changes, the vessel design may not be adequate to maintain structural integrity during design basis events resulting in a loss-of-coolant-accident. The inspectors performed a Phase 1 Significance Determination Process Screening, and evaluated this issue by application of questions 1 and 2. Questions No’s 1 and 2 asked: if after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, the degradation prompting the reduction in the number of head studs and the licensee’s failure to maintain the design analysis had not yet affected the ability of the reactor vessel to perform its design functions so the inspector answered these questions “No” and this issue screened as having very low risk significance. Inspectors determined that this finding is not indicative of current performance and no cross-cutting aspect was assigned.

Inspection Report# : [2013005](#) (pdf)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Vessel Stress Analysis for Unit 2 Missing Head Stud

Inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion III “Design Control” for failure to perform an adequate thermal-mechanical analysis to support operation with a missing Unit 2 head stud. Specifically, the licensee did not perform a complete set of analysis under operating, faulted and design conditions to confirm the associated stud and flange stresses remained within the Code allowable limits. Consequently, the licensee did not recognize that the bearing stress under the head stud nuts at the vessel flange face exceeded the Code allowable stress. The licensee entered this issue into their CAP as IR 01578717.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Initiating Events Cornerstone and adversely impacted the cornerstone objective of to limit the likelihood of those events that upset plant stability and challenge critical safety functions. The inspectors also answered “Yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the inspectors determined that this issue was more than minor because, if left uncorrected, the failure to perform an adequate thermal-mechanical analysis, could result in the inability of the reactor vessel to meet the design basis operating transient without a LOCA. The inspectors performed a Phase 1 Significance Determination Process Screening and evaluated this issue by application of questions 1 and 2. Questions 1 and 2 asked if; after a reasonable assessment of degradation, could the finding result in exceeding the reactor coolant leak rate for a small loss-of-coolant-accident (LOCA) or could the finding have likely affected other systems used to mitigate a LOCA resulting in a total loss of their function (e.g., Interfacing System LOCA)? In this case, because of the available margins in the flange material strength, the inspector answered these questions “No” and this issue screened as having very low risk significance. This finding has a cross-cutting aspect in the area of Human Performance Resources, because the licensee did not have complete, accurate and up-to-date design documentation, procedures, and work packages. Specifically, the licensee failed to ensure the applicable ASME Code Section III design limit for bearing stress (design basis) was correctly translated into a design document (EC 379850). (H.2(c)).

Inspection Report# : [2013005](#) (*pdf*)

Mitigating Systems

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Emergency Service Water Blowdown Isolation Valves Were Not Tested

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XI, “Test Control,” for failure to demonstrate the ability to isolate the emergency service water blowdown as credited in analysis described in the Updated Final Safety Analysis Report. Specifically, the licensee was not periodically testing the active function of the blowdown isolation valves. This finding was entered into the licensee’s Corrective Action Program, in part, to periodically test the closing function of the blowdown isolation valves.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of the ultimate heat sink to respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it did not result in the loss of operability or functionality. Specifically, the licensee reviewed recent history of the affected piping system and determined it opportunistically cycled the valves without incidents. The inspectors did not identify a cross-cutting

aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (pdf)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Intake Structure Silt Level Acceptance Criteria Were Non-Conservative

The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to develop appropriate intake structure silt level acceptance criteria. Specifically, the licensee used a non-conservative river water low level value as an input when developing silt level acceptance criteria. This finding was entered into the licensee's CAP to correct the acceptance criteria and revise the affected surveillance procedures.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective of ensuring the availability, reliability, and capability of the ultimate heat sink to respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it did not result in the loss of operability or functionality. Specifically, a historic review did not find an example where the as-found silt level resulted in an inoperable condition. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (pdf)

Significance:  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Preventative Maintenance Procedure Replacement Schedules for Essential Service Water Makeup Pump Diesel Engine Hoses

. Inspectors identified a finding of very low safety significance and associated Non-Cited Violation of TS 5.4.1, "Procedures," for failure to establish and implement a preventive maintenance schedule to replace hoses on SX Make Up pump diesel engine. Specifically, the licensee failed to implement preventive maintenance procedures that require periodic replacement of hoses on pre-established schedules in accordance with vendor recommendation and corporate Performance Centered Maintenance (PCM) template. The finding was entered into the licensee's Corrective Actions Program, in part, to evaluate the current maintenance strategy for maintaining flexible hoses on the SX make-up pump diesel engines.

The performance deficiency was determined to be more than minor because if left uncorrected the failure of SX Make up pump engine hoses could result in the inoperability of the SX Make up pumps. The performance deficiency also screened as more than minor because it affected the Procedure Quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. The finding screened as being of very low safety significance because it did not result in the loss of operability or functionality. Specifically, the licensee has reviewed the recent history of hose inspections and instances that required hose replacement and determined no failures have occurred that resulted in an inoperable condition. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2013005](#) (pdf)

Barrier Integrity

Significance: G Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

Analytical Bases for PTL Curves Not Maintained Consistent With Unit 2 Head Stud Configuration

Inspectors identified a finding of very low safety significance and an associated NCV of TS 5.6.6, Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR), for failure to maintain the analytical basis for deriving the pressure temperature limit curves consistent with the Unit 2 vessel head stud configuration. Specifically, the analytical model used in WCAP-16143 “Reactor Vessel Closure Head/Vessel Flange Requirements Evaluation for Byron/Braidwood Units 1 and 2” was based the original closure head configuration and did not represent the modified closure head configuration (53 head studs) applicable to the Unit 2 reactor vessel. The licensee entered this issue into their CAP as AR 01578276.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Barrier Integrity Cornerstone and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accident or events. The inspectors also answered “yes” to the More-than-Minor screening question “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, if left uncorrected, continued operation without a correct stress analysis to support the approved pressure temperature limit curves could have allowed the reactor to operate at a pressure and temperature that increased the chance for a brittle fracture of the vessel under a pressurized thermal shock event. The inspectors performed a Phase 1 Significance Determination Process Screening and selected the box under the Reactor Coolant System Boundary (e.g. pressurized thermal shock issues) which required a detailed risk evaluation. An NRC Region III senior reactor analyst performed a detailed risk evaluation of this finding. A potential increase in the probability for vessel failure would exist if the plant was operated in the unacceptable pressure-temperature regions and a pressurized thermal shock event occurred. Based on the licensee and supporting vendor assessments which concluded that no substantial increase in vessel stresses will occur due to operation with 53 head studs, the driving force for crack propagation (e.g. K1) will remain essentially unchanged. However, to bound the delta risk evaluation, it was assumed that the initiating event frequency for a reactor vessel failure increased by 10 percent. From the Byron Standardized Plant Analysis Risk model version 8.21, the initiating event frequency for reactor vessel failure from any cause was 1E-7/yr. Core damage is expected to occur if reactor vessel failure occurs. The exposure time for the finding was the maximum of one year. Thus, a bounding risk assessment yields a delta risk of 1E 8/yr. Therefore, based on the detailed risk evaluation, this finding is of very low risk significance. This finding has a cross-cutting aspect in the area of Human Performance Decision Making, because the licensee did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed. In this case, the licensee staff made a non-conservative assumption that the 10 CFR 50.59 process could be applied to authorize a change in the WCAP 16143 analysis and to not seek prior NRC approval (H.1 (b)).

Inspection Report# : [2013005](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : November 26, 2014

Byron 2

4Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY IMPLEMENT A COMPENSATORY FIRE WATCH AS REQUIRED BY THE FIRE PROTECTION PROGRAM

A finding with two examples of very low safety significance and associated NCV of Technical Specification 5.4.1.c was self-revealed when required compensatory fire watches were discovered to have been terminated while the fire systems were still impaired. Specifically, the licensee failed to maintain compensatory fire watches for Fire Zone 3.1-1, "Unit 1 Electrical Cable Tunnel" and for Fire Zones 10.1-2 "2B Diesel Fuel Oil Storage Room" and 10.2-2 "2A Diesel Fuel Oil Storage Room" required by procedure OP-MW-201-007 and as described in Technical Requirements Manual limiting conditions for operations.

The inspectors determined that this finding was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the finding was associated with the Initiating Events Cornerstone attribute of Protection Against External Factors (Fire) and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during plant operations. Specifically, required fire watches established as compensatory measures should have been maintained for the duration of the work activity so that the sites ability to promptly detect and suppress a fire would be maintained. The inspectors evaluated this issue in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings." In Table 3 of Attachment 4, "SDP Appendix Router," the inspectors answered "Yes" to Question E.2, "Does the finding involve:...(2) Fixed fire protection systems....?" Therefore, the inspectors continued the risk evaluation using IMC 0609 Appendix F, "Fire Protection Significance Determination Process." Due to the equipment located in each of the affected fire zones, the two examples were evaluated independently. One example screened to Green using the questions under Task 1.4.2 for fixed fire protections systems. The senior reactor analyst performed a quantitative Phase 2 evaluation and determined the issue to be Green. The inspectors determined that a principle contributor to the finding was that the organization did not implement a process for planning, implementing, and executing concurrent work activities that ensured the required compensatory actions were maintained such that nuclear safety was the overriding priority (WP.1). As a result, the inspectors assigned a cross-cutting aspect of Work Management (H.5) to the finding.

Inspection Report# : [2014002](#) (*pdf*)

Mitigating Systems

Significance: G Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Measure Interpass Temperature

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for a failure to measure the interpass temperature while

performing welding on the on the safety injection (SI) piping system. Consequently, welding was performed without the Code and procedure required interpass temperature being monitored on a number of welds, a parameter which can affect the mechanical properties of the material being welded. After identification of the issue, the welders restored compliance by measuring the interpass temperatures on the balance of the welds and verifying that the interpass temperature did not exceed that allowed by procedure. The licensee entered this issue into its Corrective Action Program (CAP) (IR 02391545).

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, absent NRC intervention, the welders would have completed all of the welds without having measured the interpass temperature, a welding parameter which can affect the mechanical properties (e.g., impact properties) of some materials being welded, and if left uncorrected, could lead to a potential failure of the weld in service. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because leakage on the SI piping system could degrade short term heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012. Specifically, the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating Systems Structures and Components (SSC), does the SSC maintain its operability or functionality?" The welders proceeded to measure the interpass temperatures on the balance of the welds and verified that the interpass temperature did not exceed that allowed by procedure, and the issue did not result in the actual loss of the operability or functionality of a safety system. The finding had a cross-cutting aspect of Procedure Adherence in the area of Human Performance (IMC 0310 H.8). Specifically, the welders failed to follow procedures.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Liquid Penetrant (PT) Testing Procedure Did Not Meet ASME Code

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for the failure to perform a Liquid Penetrant Test (PT) in accordance with the American Society for Mechanical Engineers (ASME) Code while performing a surface examination on reactor coolant pump (RCP) flywheel 2A/D483. The vendor conducted a demonstration in an attempt to show the differences in bleed-out between the two dwell times, to demonstrate continued functionality of the flywheel. The results showed little if any difference in the growth of the bleed-out given the additional time. The licensee was developing an action plan to address the non-conformance and restore compliance. The issue was entered into the licensee's CAP as IR 02393595 and IR 02399248.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, since the liquid penetrant testing developer minimum dwell time may not have been met, the liquid penetrant examination was not assured to accurately measure a rejectable flaw. Absent NRC intervention, the potential would exist for a rejectable flaw to remain in service, affecting the operability of affected systems. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because failure of the RCP flywheel could degrade core decay heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-

Power,” issued on June 19, 2012. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system; and therefore the inspectors answered "Yes" to the screening question “If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?” The vendor subsequently performed demonstrations to show that the bleed-out from an indication would not change appreciably when implementing the additional dwell time. The licensee was still evaluating its planned corrective actions. However, the inspectors determined that the continued non-compliance did not present an immediate safety concern because the licensee/vendor reasonably determined the RCP flywheel remained functional. The finding had a cross-cutting aspect of Change Management in the area of Human Performance (IMC 0310 H.3) in that leaders failed to use a systematic process for evaluating and implementing change so that nuclear safety remains an overriding priority. Specifically, the licensee failed to ensure that the vendor changed its procedure to reflect the requirements of the current edition of the ASME Code adopted by the licensee.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Welding Procedure Specifications Variables Changed Without Revision or Amendment Contrary to ASME Code

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, “Control of Special Processes,” for the failure to revise or amend a welding procedure specification (WPS) after changing welding variables, including an increase in amperage, for welding performed on the SI system. The licensee interviewed the welders who indicated that they would likely not have increased the amperage to the range permitted, to restore compliance. The licensee planned to review the use of vendor technical information (VTIP) manual information for welding criteria and cover this issue with the work order planners. Also, the site welding administrator planned to review the issue to be aware of possible WPS deviations in work instructions. The issue was entered into the licensee’s CAP as IR 02392483.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, “Issue Screening,” dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the welding variables were changed without appropriate process or documentation, or meeting ASME Code, which resulted in the permitted use of a significant increase in amperage above that in the WPS. This permitted the welders to use an elevated heat input which could have been detrimental to the components being welded. In accordance with Table 2, “Cornerstones Affected by Degraded Condition or Programmatic Weakness,” of IMC 609, Attachment 4, “Initial Characterization of Findings,” issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because degradation of the SI system could degrade short term heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, “Mitigating Systems Screening Questions,” in IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” issued on June 19, 2012. Specifically, the inspectors answered "Yes" to the screening question “If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?” The welders indicated that they would likely not have used the elevated heat inputs; and therefore, would still comply with the original WPS, and the issue did not result in the actual loss of the operability or functionality of a safety system. The finding had a cross-cutting aspect of Documentation in the area of Human Performance (IMC 0310 H.7). Specifically, the organization failed to create and maintain complete, accurate and up-to-date documentation.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Evaluate Operability of a TS SSC Upon Discovery of a Support System Degraded Condition

Inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions Procedures, and Drawings," for failure to implement procedure OP-AA-108-115, "Operability Determinations (CM-1)," as written when a degraded condition was identified for a non-TS SSC that supported a TS SSC. Specifically, during a surveillance test of the flood barrier door to the 2B emergency diesel generator (EDG) fuel oil storage tank room in March 2014, maintenance technicians identified a degraded condition that, while not affecting immediate functionality of the barrier, was identified to have the potential to impact the door functionality prior to the next scheduled performance of the surveillance. An Operability Determination was not performed for the supported TS SSCs at that time as required by OP-AA-108-115 and in June of 2014 (the next surveillance performance), the door failed the test, and both Unit EDGs were declared inoperable. The issue was entered in the CAP as Issue Report (IR) 1675255. Upon discovery of the failure of the water-tight door, a temporary water-tight barrier was immediately installed, restoring operability of the Unit 2 EDGs. The permanent water-tight door was repaired and returned to service at a later date.

Failure to perform and document an operability determination of the Unit 2 EDGs and fuel oil transfer pumps upon discovery of the degraded condition of the support system (i.e., flood barrier door) is a performance deficiency. The finding was more than minor because, if left uncorrected, failure to evaluate operability through a SSC's surveillance interval can lead to more significant safety concerns and an unevaluated assumption of risk by the station. The finding affected the Mitigating Systems Cornerstone because it impacted an External Events Mitigation System (degraded flood protection). Because a complete loss of the water-tight door could impact both Unit 2 EDG trains, the NRC Senior Reactor Analysts (SRAs) performed a more detailed significance determination and determined that the finding was not greater than Green.

The finding had a cross-cutting aspect of Conservative Bias in the area of Human Performance (IMC 0310 H.14) because the licensee's decisions regarding disposition of the degraded condition did not indicate a conservative bias that emphasized prudent choices over those that were allowable. Even though mechanics identified the potential for the condition to degrade further in the near future, the work request was not given a high priority and continued functionality of the door was not evaluated through the next surveillance period by the licensee.

Inspection Report# : [2014005](#) (*pdf*)

Barrier Integrity

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: FIN Finding

Containment Penetration Valves Rendered Inoperable for Operational Convenience

Inspectors identified a finding of very low safety significance when the licensee impaired a flood protection boundary that supported a required safety function for operational convenience. Specifically, the licensee removed the flood barriers for auxiliary feedwater system containment isolation valves and rendered the valves inoperable prior to the plant reaching Mode 5 and thereby entered TS 3.6.3 Condition C for operational convenience contrary to the TS Bases associated with TS 3.0.2 Limiting Condition for Operability (LCO) Applicability. From 2010 on September 28, 2014, until 0536 on September 29, 2014, while transitioning from Mode 1 to Mode 5, the valves were rendered inoperable. This issue has been entered in the CAP as IR 2390265. Corrective actions included Senior Reactor Operator review of the LCO basis and creating a logic tie in the outage schedule template tying the barrier removal to Mode 5.

The finding was more than minor because it impacted the SSC and Barrier Performance attribute of the Barrier Integrity Cornerstone, and adversely affected the cornerstone objective to provide reasonable assurance that the physical design barrier of the containment system protects the public from radionuclide releases caused by accidents or events. Specifically, with inoperable containment isolation valves the potential for an open containment pathway is increased. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, Appendix A, "The Significance Determination Process For Findings At-Power," Exhibit 3–Barrier Integrity Screening Questions, item B for the Reactor Containment. Both questions were answered "No" and therefore the finding screened as Green.

The finding had an associated cross-cutting aspect of Work Management in the area of Human Performance (MC 0310 H.5) because the shutdown and outage work schedules did not contain the rigor required to ensure the isolation valves were maintained operable as required by TS.

Inspection Report# : [2014005](#) (*pdf*)

Emergency Preparedness

Significance:  Nov 07, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Evacuation Time Estimate Submittals

The NRC identified a Non-Cited Violation (NCV) of 10 CFR 50.54(q)(2) associated with 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV.4, for failing to maintain the effectiveness of the Byron Station Emergency Plan, as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date.

Exelon submitted the Byron Station ETE to the NRC on December 12, 2012, prior to the required due date of December 22, 2012. The NRC completeness review found the ETEs to be incomplete due to Exelon fleet common and site-specific deficiencies; thereby, preventing Exelon from providing the ETEs to responsible OROs and from updating site-specific protective action strategies as necessary. The NRC discussed its concerns regarding the completeness of the ETE, in a teleconference with Exelon on June 10, 2013, and on September 5, 2013, Exelon resubmitted the ETEs for its sites. The NRC again found the ETEs to be incomplete. The issue is a performance deficiency because it involves a failure to comply with a regulation that was under Exelon's control to identify and prevent. The finding is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and because it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding is of very low safety significance (Green) because it was a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The licensee had entered this issue into their CAP and re-submitted a new revision of the Byron Station ETE to the NRC on May 2, 2014, which was found to be complete by the NRC. The cause of the finding is related to cross-cutting element of Human Performance, Documentation. [IMC 0310 H.7]

Inspection Report# : [2014004](#) (*pdf*)

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : February 26, 2015

Byron 2

1Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Provide Work Instructions that Appropriately Address Foreign Material Exclusion from Safeguards Relays

The inspectors identified a finding of very low safety significance and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to provide work instructions appropriate to the circumstances for a work activity affecting quality. The licensee's work instructions for modifying safety-related relays on Unit 2 failed to include guidance on foreign material exclusion issues identified previously during the same modification on Unit 1. This resulted in foreign material preventing the Unit 2 Safeguards Actuation Relay Train A from actuating during surveillance testing. The licensee replaced the affected relay prior to declaring the system operable, performed an extent of condition on similar relays on both Units 1 and 2, and entered the issue in their Corrective Action Program in Issue Report (IR) 2388711.

The inspectors determined the finding was more than minor because it adversely affected the Mitigating Systems Cornerstone objective to ensure the reliability of systems that respond to initiating events. The Senior Reactor Analysts performed a detailed risk analysis and concluded that the finding was of very low safety significance, or Green. The finding had a cross-cutting aspect of Evaluation in the area of Problem Identification and Resolution because the licensee failed to thoroughly evaluate the foreign material identified on Unit 1 to ensure that the resolution addressed the extent of condition. (P.2) [Section 4OA2.3]

Inspection Report# : [2015001](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Measure Interpass Temperature

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for a failure to measure the interpass temperature while performing welding on the on the safety injection (SI) piping system. Consequently, welding was performed without the Code and procedure required interpass temperature being monitored on a number of welds, a parameter which can affect the mechanical properties of the material being welded. After identification of the issue, the welders restored compliance by measuring the interpass temperatures on the balance of the welds and verifying that the interpass temperature did not exceed that allowed by procedure. The licensee entered this issue into its Corrective Action Program (CAP) (IR 02391545).

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If

left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, absent NRC intervention, the welders would have completed all of the welds without having measured the interpass temperature, a welding parameter which can affect the mechanical properties (e.g., impact properties) of some materials being welded, and if left uncorrected, could lead to a potential failure of the weld in service. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because leakage on the SI piping system could degrade short term heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012. Specifically, the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating Systems Structures and Components (SSC), does the SSC maintain its operability or functionality?" The welders proceeded to measure the interpass temperatures on the balance of the welds and verified that the interpass temperature did not exceed that allowed by procedure, and the issue did not result in the actual loss of the operability or functionality of a safety system. The finding had a cross-cutting aspect of Procedure Adherence in the area of Human Performance (IMC 0310 H.8). Specifically, the welders failed to follow procedures.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Liquid Penetrant (PT) Testing Procedure Did Not Meet ASME Code

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for the failure to perform a Liquid Penetrant Test (PT) in accordance with the American Society for Mechanical Engineers (ASME) Code while performing a surface examination on reactor coolant pump (RCP) flywheel 2A/D483. The vendor conducted a demonstration in an attempt to show the differences in bleed-out between the two dwell times, to demonstrate continued functionality of the flywheel. The results showed little if any difference in the growth of the bleed-out given the additional time. The licensee was developing an action plan to address the non-conformance and restore compliance. The issue was entered into the licensee's CAP as IR 02393595 and IR 02399248.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, since the liquid penetrant testing developer minimum dwell time may not have been met, the liquid penetrant examination was not assured to accurately measure a rejectable flaw. Absent NRC intervention, the potential would exist for a rejectable flaw to remain in service, affecting the operability of affected systems. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because failure of the RCP flywheel could degrade core decay heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system; and therefore the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" The vendor subsequently performed demonstrations to show that the bleed-out from an indication would not change appreciably when implementing the additional dwell time. The licensee was still evaluating its planned corrective actions. However, the inspectors determined that the continued non-compliance did not present an immediate safety concern because the licensee/vendor reasonably determined the RCP flywheel remained functional. The finding had a cross-cutting aspect of Change Management in the area of Human Performance (IMC 0310 H.3) in

that leaders failed to use a systematic process for evaluating and implementing change so that nuclear safety remains an overriding priority. Specifically, the licensee failed to ensure that the vendor changed its procedure to reflect the requirements of the current edition of the ASME Code adopted by the licensee.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Welding Procedure Specifications Variables Changed Without Revision or Amendment Contrary to ASME Code

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, “Control of Special Processes,” for the failure to revise or amend a welding procedure specification (WPS) after changing welding variables, including an increase in amperage, for welding performed on the SI system. The licensee interviewed the welders who indicated that they would likely not have increased the amperage to the range permitted, to restore compliance. The licensee planned to review the use of vendor technical information (VTIP) manual information for welding criteria and cover this issue with the work order planners. Also, the site welding administrator planned to review the issue to be aware of possible WPS deviations in work instructions. The issue was entered into the licensee’s CAP as IR 02392483.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, “Issue Screening,” dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, “If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?” Specifically, the welding variables were changed without appropriate process or documentation, or meeting ASME Code, which resulted in the permitted use of a significant increase in amperage above that in the WPS. This permitted the welders to use an elevated heat input which could have been detrimental to the components being welded. In accordance with Table 2, “Cornerstones Affected by Degraded Condition or Programmatic Weakness,” of IMC 609, Attachment 4, “Initial Characterization of Findings,” issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because degradation of the SI system could degrade short term heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, “Mitigating Systems Screening Questions,” in IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” issued on June 19, 2012. Specifically, the inspectors answered "Yes" to the screening question “If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?” The welders indicated that they would likely not have used the elevated heat inputs; and therefore, would still comply with the original WPS, and the issue did not result in the actual loss of the operability or functionality of a safety system. The finding had a cross-cutting aspect of Documentation in the area of Human Performance (IMC 0310 H.7). Specifically, the organization failed to create and maintain complete, accurate and up-to-date documentation.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Evaluate Operability of a TS SSC Upon Discovery of a Support System Degraded Condition

Inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, “Instructions Procedures, and Drawings,” for failure to implement procedure OP-AA-108-115, “Operability Determinations (CM-1),” as written when a degraded condition was identified for a non-TS SSC that supported a TS SSC. Specifically, during a surveillance test of the flood barrier door to the 2B emergency diesel generator (EDG) fuel oil storage tank room in March 2014, maintenance technicians identified a

degraded condition that, while not affecting immediate functionality of the barrier, was identified to have the potential to impact the door functionality prior to the next scheduled performance of the surveillance. An Operability Determination was not performed for the supported TS SSCs at that time as required by OP-AA-108-115 and in June of 2014 (the next surveillance performance), the door failed the test, and both Unit EDGs were declared inoperable. The issue was entered in the CAP as Issue Report (IR) 1675255. Upon discovery of the failure of the water-tight door, a temporary water-tight barrier was immediately installed, restoring operability of the Unit 2 EDGs. The permanent water-tight door was repaired and returned to service at a later date.

Failure to perform and document an operability determination of the Unit 2 EDGs and fuel oil transfer pumps upon discovery of the degraded condition of the support system (i.e., flood barrier door) is a performance deficiency. The finding was more than minor because, if left uncorrected, failure to evaluate operability through a SSC's surveillance interval can lead to more significant safety concerns and an unevaluated assumption of risk by the station. The finding affected the Mitigating Systems Cornerstone because it impacted an External Events Mitigation System (degraded flood protection). Because a complete loss of the water-tight door could impact both Unit 2 EDG trains, the NRC Senior Reactor Analysts (SRAs) performed a more detailed significance determination and determined that the finding was not greater than Green.

The finding had a cross-cutting aspect of Conservative Bias in the area of Human Performance (IMC 0310 H.14) because the licensee's decisions regarding disposition of the degraded condition did not indicate a conservative bias that emphasized prudent choices over those that were allowable. Even though mechanics identified the potential for the condition to degrade further in the near future, the work request was not given a high priority and continued functionality of the door was not evaluated through the next surveillance period by the licensee.

Inspection Report# : [2014005](#) (pdf)

Barrier Integrity

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: FIN Finding

Containment Penetration Valves Rendered Inoperable for Operational Convenience

Inspectors identified a finding of very low safety significance when the licensee impaired a flood protection boundary that supported a required safety function for operational convenience. Specifically, the licensee removed the flood barriers for auxiliary feedwater system containment isolation valves and rendered the valves inoperable prior to the plant reaching Mode 5 and thereby entered TS 3.6.3 Condition C for operational convenience contrary to the TS Bases associated with TS 3.0.2 Limiting Condition for Operability (LCO) Applicability. From 2010 on September 28, 2014, until 0536 on September 29, 2014, while transitioning from Mode 1 to Mode 5, the valves were rendered inoperable. This issue has been entered in the CAP as IR 2390265. Corrective actions included Senior Reactor Operator review of the LCO basis and creating a logic tie in the outage schedule template tying the barrier removal to Mode 5.

The finding was more than minor because it impacted the SSC and Barrier Performance attribute of the Barrier Integrity Cornerstone, and adversely affected the cornerstone objective to provide reasonable assurance that the physical design barrier of the containment system protects the public from radionuclide releases caused by accidents or events. Specifically, with inoperable containment isolation valves the potential for an open containment pathway is increased. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, Appendix A, "The Significance Determination Process For Findings At-Power," Exhibit 3-Barrier Integrity Screening Questions, item B for the Reactor Containment. Both questions were answered "No" and therefore the finding

screened as Green.

The finding had an associated cross-cutting aspect of Work Management in the area of Human Performance (MC 0310 H.5) because the shutdown and outage work schedules did not contain the rigor required to ensure the isolation valves were maintained operable as required by TS.

Inspection Report# : [2014005](#) (*pdf*)

Emergency Preparedness

Significance:  Nov 07, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Evacuation Time Estimate Submittals

The NRC identified a Non-Cited Violation (NCV) of 10 CFR 50.54(q)(2) associated with 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV.4, for failing to maintain the effectiveness of the Byron Station Emergency Plan, as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date.

Exelon submitted the Byron Station ETE to the NRC on December 12, 2012, prior to the required due date of December 22, 2012. The NRC completeness review found the ETEs to be incomplete due to Exelon fleet common and site-specific deficiencies; thereby, preventing Exelon from providing the ETEs to responsible OROs and from updating site-specific protective action strategies as necessary. The NRC discussed its concerns regarding the completeness of the ETE, in a teleconference with Exelon on June 10, 2013, and on September 5, 2013, Exelon resubmitted the ETEs for its sites. The NRC again found the ETEs to be incomplete. The issue is a performance deficiency because it involves a failure to comply with a regulation that was under Exelon's control to identify and prevent. The finding is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and because it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding is of very low safety significance (Green) because it was a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The licensee had entered this issue into their CAP and re-submitted a new revision of the Byron Station ETE to the NRC on May 2, 2014, which was found to be complete by the NRC. The cause of the finding is related to cross-cutting element of Human Performance, Documentation. [IMC 0310 H.7]

Inspection Report# : [2014004](#) (*pdf*)

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : June 16, 2015

Byron 2 2Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Provide Work Instructions that Appropriately Address Foreign Material Exclusion from Safeguards Relays

The inspectors identified a finding of very low safety significance and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to provide work instructions appropriate to the circumstances for a work activity affecting quality. The licensee's work instructions for modifying safety-related relays on Unit 2 failed to include guidance on foreign material exclusion issues identified previously during the same modification on Unit 1. This resulted in foreign material preventing the Unit 2 Safeguards Actuation Relay Train A from actuating during surveillance testing. The licensee replaced the affected relay prior to declaring the system operable, performed an extent of condition on similar relays on both Units 1 and 2, and entered the issue in their Corrective Action Program in Issue Report (IR) 2388711.

The inspectors determined the finding was more than minor because it adversely affected the Mitigating Systems Cornerstone objective to ensure the reliability of systems that respond to initiating events. The Senior Reactor Analysts performed a detailed risk analysis and concluded that the finding was of very low safety significance, or Green. The finding had a cross-cutting aspect of Evaluation in the area of Problem Identification and Resolution because the licensee failed to thoroughly evaluate the foreign material identified on Unit 1 to ensure that the resolution addressed the extent of condition. (P.2) [Section 4OA2.3]

Inspection Report# : [2015001](#) (*pdf*)

Significance: G Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Measure Interpass Temperature

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for a failure to measure the interpass temperature while performing welding on the on the safety injection (SI) piping system. Consequently, welding was performed without the Code and procedure required interpass temperature being monitored on a number of welds, a parameter which can affect the mechanical properties of the material being welded. After identification of the issue, the welders restored compliance by measuring the interpass temperatures on the balance of the welds and verifying that the interpass temperature did not exceed that allowed by procedure. The licensee entered this issue into its Corrective Action Program (CAP) (IR 02391545).

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If

left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, absent NRC intervention, the welders would have completed all of the welds without having measured the interpass temperature, a welding parameter which can affect the mechanical properties (e.g., impact properties) of some materials being welded, and if left uncorrected, could lead to a potential failure of the weld in service. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because leakage on the SI piping system could degrade short term heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012. Specifically, the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating Systems Structures and Components (SSC), does the SSC maintain its operability or functionality?" The welders proceeded to measure the interpass temperatures on the balance of the welds and verified that the interpass temperature did not exceed that allowed by procedure, and the issue did not result in the actual loss of the operability or functionality of a safety system. The finding had a cross-cutting aspect of Procedure Adherence in the area of Human Performance (IMC 0310 H.8). Specifically, the welders failed to follow procedures.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Liquid Penetrant (PT) Testing Procedure Did Not Meet ASME Code

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for the failure to perform a Liquid Penetrant Test (PT) in accordance with the American Society for Mechanical Engineers (ASME) Code while performing a surface examination on reactor coolant pump (RCP) flywheel 2A/D483. The vendor conducted a demonstration in an attempt to show the differences in bleed-out between the two dwell times, to demonstrate continued functionality of the flywheel. The results showed little if any difference in the growth of the bleed-out given the additional time. The licensee was developing an action plan to address the non-conformance and restore compliance. The issue was entered into the licensee's CAP as IR 02393595 and IR 02399248.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, since the liquid penetrant testing developer minimum dwell time may not have been met, the liquid penetrant examination was not assured to accurately measure a rejectable flaw. Absent NRC intervention, the potential would exist for a rejectable flaw to remain in service, affecting the operability of affected systems. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because failure of the RCP flywheel could degrade core decay heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system; and therefore the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" The vendor subsequently performed demonstrations to show that the bleed-out from an indication would not change appreciably when implementing the additional dwell time. The licensee was still evaluating its planned corrective actions. However, the inspectors determined that the continued non-compliance did not present an immediate safety concern because the licensee/vendor reasonably determined the RCP flywheel remained functional. The finding had a cross-cutting aspect of Change Management in the area of Human Performance (IMC 0310 H.3) in

that leaders failed to use a systematic process for evaluating and implementing change so that nuclear safety remains an overriding priority. Specifically, the licensee failed to ensure that the vendor changed its procedure to reflect the requirements of the current edition of the ASME Code adopted by the licensee.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Welding Procedure Specifications Variables Changed Without Revision or Amendment Contrary to ASME Code

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for the failure to revise or amend a welding procedure specification (WPS) after changing welding variables, including an increase in amperage, for welding performed on the SI system. The licensee interviewed the welders who indicated that they would likely not have increased the amperage to the range permitted, to restore compliance. The licensee planned to review the use of vendor technical information (VTIP) manual information for welding criteria and cover this issue with the work order planners. Also, the site welding administrator planned to review the issue to be aware of possible WPS deviations in work instructions. The issue was entered into the licensee's CAP as IR 02392483.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, the welding variables were changed without appropriate process or documentation, or meeting ASME Code, which resulted in the permitted use of a significant increase in amperage above that in the WPS. This permitted the welders to use an elevated heat input which could have been detrimental to the components being welded. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because degradation of the SI system could degrade short term heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012. Specifically, the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" The welders indicated that they would likely not have used the elevated heat inputs; and therefore, would still comply with the original WPS, and the issue did not result in the actual loss of the operability or functionality of a safety system. The finding had a cross-cutting aspect of Documentation in the area of Human Performance (IMC 0310 H.7). Specifically, the organization failed to create and maintain complete, accurate and up-to-date documentation.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Evaluate Operability of a TS SSC Upon Discovery of a Support System Degraded Condition

Inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions Procedures, and Drawings," for failure to implement procedure OP-AA-108-115, "Operability Determinations (CM-1)," as written when a degraded condition was identified for a non-TS SSC that supported a TS SSC. Specifically, during a surveillance test of the flood barrier door to the 2B emergency diesel generator (EDG) fuel oil storage tank room in March 2014, maintenance technicians identified a

degraded condition that, while not affecting immediate functionality of the barrier, was identified to have the potential to impact the door functionality prior to the next scheduled performance of the surveillance. An Operability Determination was not performed for the supported TS SSCs at that time as required by OP-AA-108-115 and in June of 2014 (the next surveillance performance), the door failed the test, and both Unit EDGs were declared inoperable. The issue was entered in the CAP as Issue Report (IR) 1675255. Upon discovery of the failure of the water-tight door, a temporary water-tight barrier was immediately installed, restoring operability of the Unit 2 EDGs. The permanent water-tight door was repaired and returned to service at a later date.

Failure to perform and document an operability determination of the Unit 2 EDGs and fuel oil transfer pumps upon discovery of the degraded condition of the support system (i.e., flood barrier door) is a performance deficiency. The finding was more than minor because, if left uncorrected, failure to evaluate operability through a SSC's surveillance interval can lead to more significant safety concerns and an unevaluated assumption of risk by the station. The finding affected the Mitigating Systems Cornerstone because it impacted an External Events Mitigation System (degraded flood protection). Because a complete loss of the water-tight door could impact both Unit 2 EDG trains, the NRC Senior Reactor Analysts (SRAs) performed a more detailed significance determination and determined that the finding was not greater than Green.

The finding had a cross-cutting aspect of Conservative Bias in the area of Human Performance (IMC 0310 H.14) because the licensee's decisions regarding disposition of the degraded condition did not indicate a conservative bias that emphasized prudent choices over those that were allowable. Even though mechanics identified the potential for the condition to degrade further in the near future, the work request was not given a high priority and continued functionality of the door was not evaluated through the next surveillance period by the licensee.

Inspection Report# : [2014005](#) (pdf)

Barrier Integrity

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: FIN Finding

Containment Penetration Valves Rendered Inoperable for Operational Convenience

Inspectors identified a finding of very low safety significance when the licensee impaired a flood protection boundary that supported a required safety function for operational convenience. Specifically, the licensee removed the flood barriers for auxiliary feedwater system containment isolation valves and rendered the valves inoperable prior to the plant reaching Mode 5 and thereby entered TS 3.6.3 Condition C for operational convenience contrary to the TS Bases associated with TS 3.0.2 Limiting Condition for Operability (LCO) Applicability. From 2010 on September 28, 2014, until 0536 on September 29, 2014, while transitioning from Mode 1 to Mode 5, the valves were rendered inoperable. This issue has been entered in the CAP as IR 2390265. Corrective actions included Senior Reactor Operator review of the LCO basis and creating a logic tie in the outage schedule template tying the barrier removal to Mode 5.

The finding was more than minor because it impacted the SSC and Barrier Performance attribute of the Barrier Integrity Cornerstone, and adversely affected the cornerstone objective to provide reasonable assurance that the physical design barrier of the containment system protects the public from radionuclide releases caused by accidents or events. Specifically, with inoperable containment isolation valves the potential for an open containment pathway is increased. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, Appendix A, "The Significance Determination Process For Findings At-Power," Exhibit 3-Barrier Integrity Screening Questions, item B for the Reactor Containment. Both questions were answered "No" and therefore the finding

screened as Green.

The finding had an associated cross-cutting aspect of Work Management in the area of Human Performance (MC 0310 H.5) because the shutdown and outage work schedules did not contain the rigor required to ensure the isolation valves were maintained operable as required by TS.

Inspection Report# : [2014005](#) (*pdf*)

Emergency Preparedness

Significance:  Nov 07, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Evacuation Time Estimate Submittals

The NRC identified a Non-Cited Violation (NCV) of 10 CFR 50.54(q)(2) associated with 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV.4, for failing to maintain the effectiveness of the Byron Station Emergency Plan, as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date.

Exelon submitted the Byron Station ETE to the NRC on December 12, 2012, prior to the required due date of December 22, 2012. The NRC completeness review found the ETEs to be incomplete due to Exelon fleet common and site-specific deficiencies; thereby, preventing Exelon from providing the ETEs to responsible OROs and from updating site-specific protective action strategies as necessary. The NRC discussed its concerns regarding the completeness of the ETE, in a teleconference with Exelon on June 10, 2013, and on September 5, 2013, Exelon resubmitted the ETEs for its sites. The NRC again found the ETEs to be incomplete. The issue is a performance deficiency because it involves a failure to comply with a regulation that was under Exelon's control to identify and prevent. The finding is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and because it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding is of very low safety significance (Green) because it was a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The licensee had entered this issue into their CAP and re-submitted a new revision of the Byron Station ETE to the NRC on May 2, 2014, which was found to be complete by the NRC. The cause of the finding is related to cross-cutting element of Human Performance, Documentation. [IMC 0310 H.7]

Inspection Report# : [2014004](#) (*pdf*)

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : August 07, 2015

Byron 2

3Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 18, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Evaluate the Impact of a FLEX-Related Configuration Change on Available DG Fuel Oil Margin.

A finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the licensee failed to adequately consider the potential impact that a modification would have on the safety-related emergency diesel generator (DG) fuel oil supply credited for design basis events. Specifically, the DG fuel oil system was modified in a manner that reduced the DG fuel oil system train separation from two isolation valves to one isolation valve. The adverse impact of a leaking single isolation valve following the implementation of a diverse and flexible coping capability (FLEX) modification resulted in the IB DG fuel oil transfer pump(s) pumping fuel oil not only into its associated IB DG fuel oil day tank but also into the IA DG diesel oil storage tank (DOST). The safety-related 1B DG fuel oil system was categorized as a low margin system, and the inspectors identified that the licensee did not adequately follow the considerations provided in the design change process for a low margin system. In addition to entering this issue into their CAP, immediate corrective actions included restoring the fuel oil configuration to the previous dual isolation configuration until long-term corrective actions could be developed.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was of very low safety significance (Green) because the issue did not prevent the 1B DG from being able to operate for its mission time. The finding had a cross-cutting aspect in the Avoid Complacency component of the Human Performance cross-cutting area because the licensee failed to recognize that the configuration change resulted in the licensee operating the DG fuel oil system in a configuration that it had not routinely operated in, exposing previously unidentified deficiencies (H.12).

Inspection Report# : [2015007](#) (*pdf*)

Significance: G Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Provide Work Instructions that Appropriately Address Foreign Material Exclusion from Safeguards Relays

The inspectors identified a finding of very low safety significance and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to provide work instructions appropriate to the circumstances for a work activity affecting quality. The licensee's work instructions for modifying safety-related relays on Unit 2 failed to include guidance on foreign material exclusion issues identified

previously during the same modification on Unit 1. This resulted in foreign material preventing the Unit 2 Safeguards Actuation Relay Train A from actuating during surveillance testing. The licensee replaced the affected relay prior to declaring the system operable, performed an extent of condition on similar relays on both Units 1 and 2, and entered the issue in their Corrective Action Program in Issue Report (IR) 2388711.

The inspectors determined the finding was more than minor because it adversely affected the Mitigating Systems Cornerstone objective to ensure the reliability of systems that respond to initiating events. The Senior Reactor Analysts performed a detailed risk analysis and concluded that the finding was of very low safety significance, or Green. The finding had a cross-cutting aspect of Evaluation in the area of Problem Identification and Resolution because the licensee failed to thoroughly evaluate the foreign material identified on Unit 1 to ensure that the resolution addressed the extent of condition. (P.2) [Section 4OA2.3]

Inspection Report# : [2015001](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Measure Interpass Temperature

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for a failure to measure the interpass temperature while performing welding on the on the safety injection (SI) piping system. Consequently, welding was performed without the Code and procedure required interpass temperature being monitored on a number of welds, a parameter which can affect the mechanical properties of the material being welded. After identification of the issue, the welders restored compliance by measuring the interpass temperatures on the balance of the welds and verifying that the interpass temperature did not exceed that allowed by procedure. The licensee entered this issue into its Corrective Action Program (CAP) (IR 02391545).

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, absent NRC intervention, the welders would have completed all of the welds without having measured the interpass temperature, a welding parameter which can affect the mechanical properties (e.g., impact properties) of some materials being welded, and if left uncorrected, could lead to a potential failure of the weld in service. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because leakage on the SI piping system could degrade short term heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012. Specifically, the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating Systems Structures and Components (SSC), does the SSC maintain its operability or functionality?" The welders proceeded to measure the interpass temperatures on the balance of the welds and verified that the interpass temperature did not exceed that allowed by procedure, and the issue did not result in the actual loss of the operability or functionality of a safety system. The finding had a cross-cutting aspect of Procedure Adherence in the area of Human Performance (IMC 0310 H.8). Specifically, the welders failed to follow procedures.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Liquid Penetrant (PT) Testing Procedure Did Not Meet ASME Code

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for the failure to perform a Liquid Penetrant Test (PT) in accordance with the American Society for Mechanical Engineers (ASME) Code while performing a surface examination on reactor coolant pump (RCP) flywheel 2A/D483. The vendor conducted a demonstration in an attempt to show the differences in bleed-out between the two dwell times, to demonstrate continued functionality of the flywheel. The results showed little if any difference in the growth of the bleed-out given the additional time. The licensee was developing an action plan to address the non-conformance and restore compliance. The issue was entered into the licensee's CAP as IR 02393595 and IR 02399248.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, since the liquid penetrant testing developer minimum dwell time may not have been met, the liquid penetrant examination was not assured to accurately measure a rejectable flaw. Absent NRC intervention, the potential would exist for a rejectable flaw to remain in service, affecting the operability of affected systems. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because failure of the RCP flywheel could degrade core decay heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012. Specifically, the issue did not result in the actual loss of the operability or functionality of a safety system; and therefore the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" The vendor subsequently performed demonstrations to show that the bleed-out from an indication would not change appreciably when implementing the additional dwell time. The licensee was still evaluating its planned corrective actions. However, the inspectors determined that the continued non-compliance did not present an immediate safety concern because the licensee/vendor reasonably determined the RCP flywheel remained functional. The finding had a cross-cutting aspect of Change Management in the area of Human Performance (IMC 0310 H.3) in that leaders failed to use a systematic process for evaluating and implementing change so that nuclear safety remains an overriding priority. Specifically, the licensee failed to ensure that the vendor changed its procedure to reflect the requirements of the current edition of the ASME Code adopted by the licensee.

Inspection Report# : [2014005](#) (pdf)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Welding Procedure Specifications Variables Changed Without Revision or Amendment Contrary to ASME Code

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for the failure to revise or amend a welding procedure specification (WPS) after changing welding variables, including an increase in amperage, for welding performed on the SI system. The licensee interviewed the welders who indicated that they would likely not have increased the amperage to the range permitted, to restore compliance. The licensee planned to review the use of vendor technical information (VTIP) manual information for welding criteria and cover this issue with the work order planners. Also, the site welding administrator planned to review the issue to be aware of possible WPS deviations in work instructions. The issue was entered into the licensee's CAP as IR 02392483.

The inspectors determined that this issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?"

Specifically, the welding variables were changed without appropriate process or documentation, or meeting ASME Code, which resulted in the permitted use of a significant increase in amperage above that in the WPS. This permitted the welders to use an elevated heat input which could have been detrimental to the components being welded. In accordance with Table 2, "Cornerstones Affected by Degraded Condition or Programmatic Weakness," of IMC 609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, the inspectors checked the box under the Mitigating Systems Cornerstone because degradation of the SI system could degrade short term heat removal. The inspectors determined this finding was of very-low safety significance (Green) using Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued on June 19, 2012. Specifically, the inspectors answered "Yes" to the screening question "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" The welders indicated that they would likely not have used the elevated heat inputs; and therefore, would still comply with the original WPS, and the issue did not result in the actual loss of the operability or functionality of a safety system. The finding had a cross-cutting aspect of Documentation in the area of Human Performance (IMC 0310 H.7). Specifically, the organization failed to create and maintain complete, accurate and up-to-date documentation.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Evaluate Operability of a TS SSC Upon Discovery of a Support System Degraded Condition

Inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions Procedures, and Drawings," for failure to implement procedure OP-AA-108-115, "Operability Determinations (CM-1)," as written when a degraded condition was identified for a non-TS SSC that supported a TS SSC. Specifically, during a surveillance test of the flood barrier door to the 2B emergency diesel generator (EDG) fuel oil storage tank room in March 2014, maintenance technicians identified a degraded condition that, while not affecting immediate functionality of the barrier, was identified to have the potential to impact the door functionality prior to the next scheduled performance of the surveillance. An Operability Determination was not performed for the supported TS SSCs at that time as required by OP-AA-108-115 and in June of 2014 (the next surveillance performance), the door failed the test, and both Unit EDGs were declared inoperable. The issue was entered in the CAP as Issue Report (IR) 1675255. Upon discovery of the failure of the water-tight door, a temporary water-tight barrier was immediately installed, restoring operability of the Unit 2 EDGs. The permanent water-tight door was repaired and returned to service at a later date.

Failure to perform and document an operability determination of the Unit 2 EDGs and fuel oil transfer pumps upon discovery of the degraded condition of the support system (i.e., flood barrier door) is a performance deficiency. The finding was more than minor because, if left uncorrected, failure to evaluate operability through a SSC's surveillance interval can lead to more significant safety concerns and an unevaluated assumption of risk by the station. The finding affected the Mitigating Systems Cornerstone because it impacted an External Events Mitigation System (degraded flood protection). Because a complete loss of the water-tight door could impact both Unit 2 EDG trains, the NRC Senior Reactor Analysts (SRAs) performed a more detailed significance determination and determined that the finding was not greater than Green.

The finding had a cross-cutting aspect of Conservative Bias in the area of Human Performance (IMC 0310 H.14) because the licensee's decisions regarding disposition of the degraded condition did not indicate a conservative bias that emphasized prudent choices over those that were allowable. Even though mechanics identified the potential for the condition to degrade further in the near future, the work request was not given a high priority and continued functionality of the door was not evaluated through the next surveillance period by the licensee.

Inspection Report# : [2014005](#) (*pdf*)

Barrier Integrity

Significance:  Sep 18, 2015

Identified By: NRC

Item Type: VIO Violation

Failure to Analyze RHUT Inlet Piping Loads

The inspectors identified a finding of very low safety significance (Green) and an associated VIO of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to evaluate the effect of dynamic loads on inlet piping from Unit 1 and Unit 2 residual heat removal (RHR) suction relief valves that discharged to the recycle holdup tank (RHUT). The NRC previously issued two NCVs regarding this issue and corrective actions to date have been incomplete. In addition to entering this issue into their CAP, planned corrective actions included the installation of approximately 20 pipe supports.

The inspectors determined that the performance deficiency was more than minor, because it was associated with the Barrier Integrity Cornerstone attribute of Design Control and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the licensee's existing design and piping configuration had not addressed water hammer effects when the Unit 1 and Unit 2 RHR suction relief valves were aligned to discharge to the RHUT. A ruptured RHUT and/or associated piping outside of containment could adversely affect on-site and offsite dose consequences. An NRC Senior Reactor Analyst (SRA) performed a detailed risk evaluation and determination that the finding was of very low safety significance (i.e., Green). The finding had a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area because leaders at the station did not ensure that personnel, equipment, procedures, and other necessary resources were available and adequate to correct the condition adverse to quality (H.1).

Inspection Report# : [2015007](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: FIN Finding

Containment Penetration Valves Rendered Inoperable for Operational Convenience

Inspectors identified a finding of very low safety significance when the licensee impaired a flood protection boundary that supported a required safety function for operational convenience. Specifically, the licensee removed the flood barriers for auxiliary feedwater system containment isolation valves and rendered the valves inoperable prior to the plant reaching Mode 5 and thereby entered TS 3.6.3 Condition C for operational convenience contrary to the TS Bases associated with TS 3.0.2 Limiting Condition for Operability (LCO) Applicability. From 2010 on September 28, 2014, until 0536 on September 29, 2014, while transitioning from Mode 1 to Mode 5, the valves were rendered inoperable. This issue has been entered in the CAP as IR 2390265. Corrective actions included Senior Reactor Operator review of the LCO basis and creating a logic tie in the outage schedule template tying the barrier removal to Mode 5.

The finding was more than minor because it impacted the SSC and Barrier Performance attribute of the Barrier Integrity Cornerstone, and adversely affected the cornerstone objective to provide reasonable assurance that the physical design barrier of the containment system protects the public from radionuclide releases caused by accidents or events. Specifically, with inoperable containment isolation valves the potential for an open containment pathway is increased. The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609,

Appendix A, “The Significance Determination Process For Findings At-Power,” Exhibit 3–Barrier Integrity Screening Questions, item B for the Reactor Containment. Both questions were answered "No" and therefore the finding screened as Green.

The finding had an associated cross-cutting aspect of Work Management in the area of Human Performance (MC 0310 H.5) because the shutdown and outage work schedules did not contain the rigor required to ensure the isolation valves were maintained operable as required by TS.

Inspection Report# : [2014005](#) (*pdf*)

Emergency Preparedness

Significance:  Nov 07, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Evacuation Time Estimate Submittals

The NRC identified a Non-Cited Violation (NCV) of 10 CFR 50.54(q)(2) associated with 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV.4, for failing to maintain the effectiveness of the Byron Station Emergency Plan, as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date.

Exelon submitted the Byron Station ETE to the NRC on December 12, 2012, prior to the required due date of December 22, 2012. The NRC completeness review found the ETEs to be incomplete due to Exelon fleet common and site-specific deficiencies; thereby, preventing Exelon from providing the ETEs to responsible OROs and from updating site-specific protective action strategies as necessary. The NRC discussed its concerns regarding the completeness of the ETE, in a teleconference with Exelon on June 10, 2013, and on September 5, 2013, Exelon resubmitted the ETEs for its sites. The NRC again found the ETEs to be incomplete. The issue is a performance deficiency because it involves a failure to comply with a regulation that was under Exelon’s control to identify and prevent. The finding is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and because it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding is of very low safety significance (Green) because it was a failure to comply with a non-risk significant portion of 10 CFR 50.47(b)(10). The licensee had entered this issue into their CAP and re-submitted a new revision of the Byron Station ETE to the NRC on May 2, 2014, which was found to be complete by the NRC. The cause of the finding is related to cross-cutting element of Human Performance, Documentation. [IMC 0310 H.7]

Inspection Report# : [2014004](#) (*pdf*)

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : December 15, 2015

Byron 2

4Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 18, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Evaluate the Impact of a FLEX-Related Configuration Change on Available DG Fuel Oil Margin.

A finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the licensee failed to adequately consider the potential impact that a modification would have on the safety-related emergency diesel generator (DG) fuel oil supply credited for design basis events. Specifically, the DG fuel oil system was modified in a manner that reduced the DG fuel oil system train separation from two isolation valves to one isolation valve. The adverse impact of a leaking single isolation valve following the implementation of a diverse and flexible coping capability (FLEX) modification resulted in the IB DG fuel oil transfer pump(s) pumping fuel oil not only into its associated IB DG fuel oil day tank but also into the IA DG diesel oil storage tank (DOST). The safety-related 1B DG fuel oil system was categorized as a low margin system, and the inspectors identified that the licensee did not adequately follow the considerations provided in the design change process for a low margin system. In addition to entering this issue into their CAP, immediate corrective actions included restoring the fuel oil configuration to the previous dual isolation configuration until long-term corrective actions could be developed.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was of very low safety significance (Green) because the issue did not prevent the 1B DG from being able to operate for its mission time. The finding had a cross-cutting aspect in the Avoid Complacency component of the Human Performance cross-cutting area because the licensee failed to recognize that the configuration change resulted in the licensee operating the DG fuel oil system in a configuration that it had not routinely operated in, exposing previously unidentified deficiencies (H.12).

Inspection Report# : [2015007](#) (*pdf*)

Significance: G Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Evaluate the Adverse Effects of Sharing the RWSTs of Both Reactor Units

The team identified a Severity Level IV NCV of 10 CFR 50.59(d)(1), "Changes, Tests, and Experiments," and an associated finding of very low safety significance (Green) for the licensee's failure to perform a written safety evaluation that provided the bases for the determination that a change which resulted in the sharing of the refueling water storage tanks (RWSTs) of both reactor units did not require a license amendment. Specifically, the licensee did not evaluate the adverse effect of reducing reactor unit independence. The licensee captured this issue into their CAP

with a proposed action to revise the associated calculation to remove the dependence on the opposite unit, and/or review the implications of crediting the opposite unit RWST under their 10 CFR 50.59 process.

The performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, it was associated with the Barrier Integrity cornerstone attribute of design control, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. In addition, the associated traditional enforcement violation was more than minor because the team could not reasonably determine that the changes would not have ultimately required NRC prior approval. The finding screened as very low safety significance (Green) because it did not result in the loss of operability or functionality, and it did not represent an actual open pathway in the physical integrity of the reactor containment. Specifically, the licensee reviewed the affected calculation and reasonably determined that enough conservatism existed such that adequate net positive suction head (NPSH) could be maintained without sharing the RWSTs of both reactor units. The team did not identify a cross-cutting aspect associated with this finding because it was confirmed not to be reflective of current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (*pdf*)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: FIN Finding

Failure to Evaluate the Adverse Effects of Sharing the RWSTs of Both Reactor Units

The team identified a Severity Level IV NCV of 10 CFR 50.59(d)(1), “Changes, Tests, and Experiments,” and an associated finding of very low safety significance (Green) for the licensee’s failure to perform a written safety evaluation that provided the bases for the determination that a change which resulted in the sharing of the refueling water storage tanks (RWSTs) of both reactor units did not require a license amendment. Specifically, the licensee did not evaluate the adverse effect of reducing reactor unit independence. The licensee captured this issue into their CAP with a proposed action to revise the associated calculation to remove the dependence on the opposite unit, and/or review the implications of crediting the opposite unit RWST under their 10 CFR 50.59 process.

The performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, it was associated with the Barrier Integrity cornerstone attribute of design control, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. In addition, the associated traditional enforcement violation was more than minor because the team could not reasonably determine that the changes would not have ultimately required NRC prior approval. The finding screened as very low safety significance (Green) because it did not result in the loss of operability or functionality, and it did not represent an actual open pathway in the physical integrity of the reactor containment. Specifically, the licensee reviewed the affected calculation and reasonably determined that enough conservatism existed such that adequate net positive suction head (NPSH) could be maintained without sharing the RWSTs of both reactor units. The team did not identify a cross-cutting aspect associated with this finding because it was confirmed not to be reflective of current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (*pdf*)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Implement a Design Change Associated with the RWSTs

The team identified a finding of very low safety significance (Green), and an associated NCV of 10 CFR Part 50,

Appendix B, Criterion III, "Design Control," for the licensee's failure to translate applicable design basis into Technical Specifications (TSs) Surveillance Requirement 3.5.4.2 implementing procedures. Specifically, these procedures did not verify the RWST vent line was free of ice blockage at the locations, and during all applicable MODEs of reactor operation assumed by the ECCS and containment spray (CS) pump NPSH calculation. The licensee captured this issue into their CAP to reconcile the affected procedures and calculation.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. Additionally, it was associated with the Barrier Integrity cornerstone attribute of design control, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as very low safety significance (Green) because it did not result in the loss of operability or functionality, and it did not represent an actual open pathway in the physical integrity of reactor containment. Specifically, the licensee performed a historical review of the last 3 years of operation, and did not find any instances in which the vent path temperature fell below 35 degrees Fahrenheit. The inspectors did not identify a cross-cutting aspect associated with this finding because it was confirmed not to be reflective of current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (pdf)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: FIN Finding

Failure to Evaluate the Adverse Effects of Changing the SXCT Tornado Analysis as Described in the UFSAR

The team identified a Severity Level IV NCV of 10 CFR 50.59(d)(1), "Changes, Tests, and Experiments," and an associated finding of very low safety significance (Green) for the licensee's failure to perform a written evaluation that provided the bases for the determination that the changes to the emergency service water cooling tower (SXCT) tornado analysis as described in the UFSAR did not require a license amendment. Specifically, the associated 10 CFR 50.59 Evaluation did not address the introduction of a new failure mode, the resulting loss of heat removal capacity during worst postulated conditions, and addition of operator actions that have not been demonstrated can be completed within the required time to restore the required SXCT heat removal capacity during worst case conditions. The licensee captured this issue in their CAP with a proposed action to revise the 10 CFR 50.59 Evaluation and submit a Licensee Amendment Request.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of protection against external events, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, the associated tradition enforcement violation was determined to be more than minor because the team could not reasonably determine that the changes would not have ultimately required prior NRC approval. The finding screened as of very low safety significance (Green) using a detailed evaluation because a loss of SXCT during a tornado event would degrade one or more trains of a system that supports a risk significant system or function. The bounding change to the core damage frequency was less than 5.4E-8/year. The team did not identify a cross cutting aspect associated with this finding because the finding was not representative of current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (pdf)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Provide Proper Direction for Low Level Isolation of the RWST in EOPs

The team identified a finding of very low safety significance and an associated NCV of TS 5.4, "Procedures," for the failure to maintain emergency operating procedures (EOPs) for transfer to cold leg recirculation. Specifically, the EOPs for transfer to cold leg recirculation did not contain instructions for transferring the ECCS and CS systems to the recirculation mode that ensured prevention of potential pump damage when the RWST is emptied. The licensee captured this finding into their CAP to create a standing order instructing operators to secure all pumps aligned to the RWST when it is emptied, and implement long term corrective actions to restore compliance.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of procedure quality, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, it was associated with the Barrier Integrity cornerstone attribute of procedure quality, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems, represent an actual open pathway in the physical integrity of reactor containment, and involved an actual reduction in function of hydrogen igniters in the reactor containment. Specifically, the incorrect caution would only be used in the event that transfer to sump recirculation was not completed prior to reaching tank low level, or if the RWST suction isolation valves fail to close. With respect to transfer to sump recirculation prior to reaching tank low level, a review of simulator test results reasonably determined that operators reliably complete the transfer to sump recirculation prior to reaching this set point. With respect to the failure of the RWST suction isolation valves, a review of quarterly test results reasonably determined the valves would have isolated the tank when required. The team did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (pdf)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: VIO Violation

Failure to Promptly Correct and NRC-Identified NCV Associated with the Capability to Detect and Isolate ECCS Leakage

The team identified a finding of very-low safety significance (Green), and an associated cited violation of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to correct a Condition Adverse to Quality (CAQ). Specifically, on June 15, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued a Non-Cited Violation (NCV) for the failure to provide means to detect and isolate a leak in the Emergency Core Cooling System (ECCS) within 30 minutes as described in the Updated Final Safety Analysis Report (UFSAR), which is a CAQ. As of May 22, 2015, the licensee had not corrected the CAQ. This violation is being cited because the licensee had not restored compliance, or demonstrated objective evidence of plans to restore compliance in a reasonable period following the identification of the CAQ. The licensee captured this finding into their Corrective Action Program (CAP) to promptly restore compliance.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of procedure quality, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, it was associated with the Barrier Integrity cornerstone attribute of procedure quality, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as very low safety significance (Green) because it did not result in the loss of operability or functionality, and it did not represent an actual pathway in the physical integrity of reactor containment. Specifically, the licensee reasonably demonstrated that an ECCS leak could be detected and isolated before it could adversely affect long term cooling of the plant. The team determined that the associated finding had a cross cutting aspect in the area of human performance because the licensee did not use a consistent and systematic approach to make decisions. Specifically, the creation and management of the associated

corrective action assignments were not consistent with the instructions contained in their CAP procedure. [H.13]
 Inspection Report# : [2015008](#) (pdf)

Significance: G Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Operability Evaluation Relied on Probabilities of Occurrence of the Associated Event

The team identified a finding of very low safety significance (Green), and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to make an operability determination without relying on the use of probabilistic tools. Specifically, an operability evaluation for an SXCT degraded condition used probabilities of occurrence of tornado events which was contrary to the requirements of the licensee procedure established for assessing operability of structures, systems, and components (SSCs). The licensee captured the team's concern in their CAP to revise the affected operability evaluation without using probability of occurrence of tornado events.

The performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of protection against external events, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. The finding screened as of very-low safety significance (Green) using a detailed evaluation because a loss of SXCT during a tornado event would degrade one or more trains of a system that supports a risk-significant system or function. The bounding change to the core damage frequency was less than 5.4E-8/year. The team determined that this finding had a cross-cutting aspect in the area of human performance because the licensee did not ensure knowledge transfer to maintain a knowledgeable and technically competent workforce. Specifically, the licensee did not ensure personnel were trained on the prohibition of the use of probabilities of occurrence of an event when performing operability evaluations, which was contained in licensee procedure established for assessing operability of SSCs. [H.9]

Inspection Report# : [2015008](#) (pdf)

Significance: G Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Provide Work Instructions that Appropriately Address Foreign Material Exclusion from Safeguards Relays

The inspectors identified a finding of very low safety significance and associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to provide work instructions appropriate to the circumstances for a work activity affecting quality. The licensee's work instructions for modifying safety-related relays on Unit 2 failed to include guidance on foreign material exclusion issues identified previously during the same modification on Unit 1. This resulted in foreign material preventing the Unit 2 Safeguards Actuation Relay Train A from actuating during surveillance testing. The licensee replaced the affected relay prior to declaring the system operable, performed an extent of condition on similar relays on both Units 1 and 2, and entered the issue in their Corrective Action Program in Issue Report (IR) 2388711.

The inspectors determined the finding was more than minor because it adversely affected the Mitigating Systems Cornerstone objective to ensure the reliability of systems that respond to initiating events. The Senior Reactor Analysts performed a detailed risk analysis and concluded that the finding was of very low safety significance, or Green. The finding had a cross-cutting aspect of Evaluation in the area of Problem Identification and Resolution because the licensee failed to thoroughly evaluate the foreign material identified on Unit 1 to ensure that the resolution addressed the extent of condition. (P.2) [Section 40A2.3]

Inspection Report# : [2015001](#) (pdf)

Barrier Integrity

Significance:  Sep 18, 2015

Identified By: NRC

Item Type: VIO Violation

Failure to Analyze RHUT Inlet Piping Loads

The inspectors identified a finding of very low safety significance (Green) and an associated VIO of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to evaluate the effect of dynamic loads on inlet piping from Unit 1 and Unit 2 residual heat removal (RHR) suction relief valves that discharged to the recycle holdup tank (RHUT). The NRC previously issued two NCVs regarding this issue and corrective actions to date have been incomplete. In addition to entering this issue into their CAP, planned corrective actions included the installation of approximately 20 pipe supports.

The inspectors determined that the performance deficiency was more than minor, because it was associated with the Barrier Integrity Cornerstone attribute of Design Control and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the licensee's existing design and piping configuration had not addressed water hammer effects when the Unit 1 and Unit 2 RHR suction relief valves were aligned to discharge to the RHUT. A ruptured RHUT and/or associated piping outside of containment could adversely affect on-site and offsite dose consequences. An NRC Senior Reactor Analyst (SRA) performed a detailed risk evaluation and determination that the finding was of very low safety significance (i.e., Green). The finding had a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area because leaders at the station did not ensure that personnel, equipment, procedures, and other necessary resources were available and adequate to correct the condition adverse to quality (H.1).

Inspection Report# : [2015007](#) (*pdf*)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Maintain the Instrument Loops Used to Verify Compliance with the Containment Average Air Temperature TS Limit

The team identified a finding of very-low safety significance, and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to have procedures to maintain the accuracy within necessary limits of the instrument loops used to verify compliance with the containment average air temperature TS limit of 120 degrees Fahrenheit. Specifically, in 2007, the licensee cancelled the periodic preventive maintenance (PM) intended to maintain the necessary instrument loops accuracy. The licensee entered this issue into their CAP and reasonably established that the 120 degrees Fahrenheit limit was not exceeded by reviewing applicable historical records from 2002 to time of this inspection.

The performance deficiency was determined to be more than minor because it was associated with the configuration control attribute of the Barrier Integrity Cornerstone, and adversely affected the cornerstone objective to ensure that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as very-low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment or involved an actual reduction in hydrogen igniter function. Specifically, the containment integrity remained intact and the finding did not impact the hydrogen igniter function. The team determined that this finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not identify issues completely and accurately in accordance with the CAP. Specifically, on January 15, 2015, the licensee captured the lack of periodic PM activities for the containment air temperature instrument loops in

the CAP. However, the licensee failed to completely and accurately identify the issue in that it was not treated as a CAQ. As a consequence, no corrective actions were implemented. [P.1]
Inspection Report# : [2015008](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : March 01, 2016

Byron 2

1Q/2016 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Sep 18, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Evaluate the Impact of a FLEX-Related Configuration Change on Available DG Fuel Oil Margin.

A finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the licensee failed to adequately consider the potential impact that a modification would have on the safety-related emergency diesel generator (DG) fuel oil supply credited for design basis events. Specifically, the DG fuel oil system was modified in a manner that reduced the DG fuel oil system train separation from two isolation valves to one isolation valve. The adverse impact of a leaking single isolation valve following the implementation of a diverse and flexible coping capability (FLEX) modification resulted in the IB DG fuel oil transfer pump(s) pumping fuel oil not only into its associated IB DG fuel oil day tank but also into the IA DG diesel oil storage tank (DOST). The safety-related 1B DG fuel oil system was categorized as a low margin system, and the inspectors identified that the licensee did not adequately follow the considerations provided in the design change process for a low margin system. In addition to entering this issue into their CAP, immediate corrective actions included restoring the fuel oil configuration to the previous dual isolation configuration until long-term corrective actions could be developed.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was of very low safety significance (Green) because the issue did not prevent the 1B DG from being able to operate for its mission time. The finding had a cross-cutting aspect in the Avoid Complacency component of the Human Performance cross-cutting area because the licensee failed to recognize that the configuration change resulted in the licensee operating the DG fuel oil system in a configuration that it had not routinely operated in, exposing previously unidentified deficiencies (H.12).

Inspection Report# : [2015007](#) (*pdf*)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Evaluate the Adverse Effects of Sharing the RWSTs of Both Reactor Units

The team identified a Severity Level IV NCV of 10 CFR 50.59(d)(1), "Changes, Tests, and Experiments," and an associated finding of very low safety significance (Green) for the licensee's failure to perform a written safety evaluation that provided the bases for the determination that a change which resulted in the sharing of the refueling water storage tanks (RWSTs) of both reactor units did not require a license amendment. Specifically, the licensee did not evaluate the adverse effect of reducing reactor unit independence. The licensee captured this issue into their CAP

with a proposed action to revise the associated calculation to remove the dependence on the opposite unit, and/or review the implications of crediting the opposite unit RWST under their 10 CFR 50.59 process.

The performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, it was associated with the Barrier Integrity cornerstone attribute of design control, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. In addition, the associated traditional enforcement violation was more than minor because the team could not reasonably determine that the changes would not have ultimately required NRC prior approval. The finding screened as very low safety significance (Green) because it did not result in the loss of operability or functionality, and it did not represent an actual open pathway in the physical integrity of the reactor containment. Specifically, the licensee reviewed the affected calculation and reasonably determined that enough conservatism existed such that adequate net positive suction head (NPSH) could be maintained without sharing the RWSTs of both reactor units. The team did not identify a cross-cutting aspect associated with this finding because it was confirmed not to be reflective of current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (*pdf*)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: FIN Finding

Failure to Evaluate the Adverse Effects of Sharing the RWSTs of Both Reactor Units

The team identified a Severity Level IV NCV of 10 CFR 50.59(d)(1), “Changes, Tests, and Experiments,” and an associated finding of very low safety significance (Green) for the licensee’s failure to perform a written safety evaluation that provided the bases for the determination that a change which resulted in the sharing of the refueling water storage tanks (RWSTs) of both reactor units did not require a license amendment. Specifically, the licensee did not evaluate the adverse effect of reducing reactor unit independence. The licensee captured this issue into their CAP with a proposed action to revise the associated calculation to remove the dependence on the opposite unit, and/or review the implications of crediting the opposite unit RWST under their 10 CFR 50.59 process.

The performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, it was associated with the Barrier Integrity cornerstone attribute of design control, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. In addition, the associated traditional enforcement violation was more than minor because the team could not reasonably determine that the changes would not have ultimately required NRC prior approval. The finding screened as very low safety significance (Green) because it did not result in the loss of operability or functionality, and it did not represent an actual open pathway in the physical integrity of the reactor containment. Specifically, the licensee reviewed the affected calculation and reasonably determined that enough conservatism existed such that adequate net positive suction head (NPSH) could be maintained without sharing the RWSTs of both reactor units. The team did not identify a cross-cutting aspect associated with this finding because it was confirmed not to be reflective of current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (*pdf*)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Implement a Design Change Associated with the RWSTs

The team identified a finding of very low safety significance (Green), and an associated NCV of 10 CFR Part 50,

Appendix B, Criterion III, "Design Control," for the licensee's failure to translate applicable design basis into Technical Specifications (TSs) Surveillance Requirement 3.5.4.2 implementing procedures. Specifically, these procedures did not verify the RWST vent line was free of ice blockage at the locations, and during all applicable MODEs of reactor operation assumed by the ECCS and containment spray (CS) pump NPSH calculation. The licensee captured this issue into their CAP to reconcile the affected procedures and calculation.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. Additionally, it was associated with the Barrier Integrity cornerstone attribute of design control, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as very low safety significance (Green) because it did not result in the loss of operability or functionality, and it did not represent an actual open pathway in the physical integrity of reactor containment. Specifically, the licensee performed a historical review of the last 3 years of operation, and did not find any instances in which the vent path temperature fell below 35 degrees Fahrenheit. The inspectors did not identify a cross-cutting aspect associated with this finding because it was confirmed not to be reflective of current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (pdf)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: FIN Finding

Failure to Evaluate the Adverse Effects of Changing the SXCT Tornado Analysis as Described in the UFSAR

The team identified a Severity Level IV NCV of 10 CFR 50.59(d)(1), "Changes, Tests, and Experiments," and an associated finding of very low safety significance (Green) for the licensee's failure to perform a written evaluation that provided the bases for the determination that the changes to the emergency service water cooling tower (SXCT) tornado analysis as described in the UFSAR did not require a license amendment. Specifically, the associated 10 CFR 50.59 Evaluation did not address the introduction of a new failure mode, the resulting loss of heat removal capacity during worst postulated conditions, and addition of operator actions that have not been demonstrated can be completed within the required time to restore the required SXCT heat removal capacity during worst case conditions. The licensee captured this issue in their CAP with a proposed action to revise the 10 CFR 50.59 Evaluation and submit a Licensee Amendment Request.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of protection against external events, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, the associated tradition enforcement violation was determined to be more than minor because the team could not reasonably determine that the changes would not have ultimately required prior NRC approval. The finding screened as of very low safety significance (Green) using a detailed evaluation because a loss of SXCT during a tornado event would degrade one or more trains of a system that supports a risk significant system or function. The bounding change to the core damage frequency was less than 5.4E-8/year. The team did not identify a cross cutting aspect associated with this finding because the finding was not representative of current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (pdf)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Provide Proper Direction for Low Level Isolation of the RWST in EOPs

The team identified a finding of very low safety significance and an associated NCV of TS 5.4, "Procedures," for the failure to maintain emergency operating procedures (EOPs) for transfer to cold leg recirculation. Specifically, the EOPs for transfer to cold leg recirculation did not contain instructions for transferring the ECCS and CS systems to the recirculation mode that ensured prevention of potential pump damage when the RWST is emptied. The licensee captured this finding into their CAP to create a standing order instructing operators to secure all pumps aligned to the RWST when it is emptied, and implement long term corrective actions to restore compliance.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of procedure quality, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, it was associated with the Barrier Integrity cornerstone attribute of procedure quality, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems, represent an actual open pathway in the physical integrity of reactor containment, and involved an actual reduction in function of hydrogen igniters in the reactor containment. Specifically, the incorrect caution would only be used in the event that transfer to sump recirculation was not completed prior to reaching tank low level, or if the RWST suction isolation valves fail to close. With respect to transfer to sump recirculation prior to reaching tank low level, a review of simulator test results reasonably determined that operators reliably complete the transfer to sump recirculation prior to reaching this set point. With respect to the failure of the RWST suction isolation valves, a review of quarterly test results reasonably determined the valves would have isolated the tank when required. The team did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance due to the age of the performance deficiency.

Inspection Report# : [2015008](#) (pdf)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: VIO Violation

Failure to Promptly Correct and NRC-Identified NCV Associated with the Capability to Detect and Isolate ECCS Leakage

The team identified a finding of very-low safety significance (Green), and an associated cited violation of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to correct a Condition Adverse to Quality (CAQ). Specifically, on June 15, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued a Non-Cited Violation (NCV) for the failure to provide means to detect and isolate a leak in the Emergency Core Cooling System (ECCS) within 30 minutes as described in the Updated Final Safety Analysis Report (UFSAR), which is a CAQ. As of May 22, 2015, the licensee had not corrected the CAQ. This violation is being cited because the licensee had not restored compliance, or demonstrated objective evidence of plans to restore compliance in a reasonable period following the identification of the CAQ. The licensee captured this finding into their Corrective Action Program (CAP) to promptly restore compliance.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of procedure quality, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. In addition, it was associated with the Barrier Integrity cornerstone attribute of procedure quality, and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as very low safety significance (Green) because it did not result in the loss of operability or functionality, and it did not represent an actual pathway in the physical integrity of reactor containment. Specifically, the licensee reasonably demonstrated that an ECCS leak could be detected and isolated before it could adversely affect long term cooling of the plant. The team determined that the associated finding had a cross cutting aspect in the area of human performance because the licensee did not use a consistent and systematic approach to make decisions. Specifically, the creation and management of the associated

corrective action assignments were not consistent with the instructions contained in their CAP procedure. [H.13]
 Inspection Report# : [2015008](#) (pdf)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Operability Evaluation Relied on Probabilities of Occurrence of the Associated Event

The team identified a finding of very low safety significance (Green), and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to make an operability determination without relying on the use of probabilistic tools. Specifically, an operability evaluation for an SXCT degraded condition used probabilities of occurrence of tornado events which was contrary to the requirements of the licensee procedure established for assessing operability of structures, systems, and components (SSCs). The licensee captured the team's concern in their CAP to revise the affected operability evaluation without using probability of occurrence of tornado events.

The performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of protection against external events, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. The finding screened as of very-low safety significance (Green) using a detailed evaluation because a loss of SXCT during a tornado event would degrade one or more trains of a system that supports a risk-significant system or function. The bounding change to the core damage frequency was less than $5.4E-8$ /year. The team determined that this finding had a cross-cutting aspect in the area of human performance because the licensee did not ensure knowledge transfer to maintain a knowledgeable and technically competent workforce. Specifically, the licensee did not ensure personnel were trained on the prohibition of the use of probabilities of occurrence of an event when performing operability evaluations, which was contained in licensee procedure established for assessing operability of SSCs. [H.9]

Inspection Report# : [2015008](#) (pdf)

Barrier Integrity

Significance:  Sep 18, 2015

Identified By: NRC

Item Type: VIO Violation

Failure to Analyze RHUT Inlet Piping Loads

The inspectors identified a finding of very low safety significance (Green) and an associated VIO of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to evaluate the effect of dynamic loads on inlet piping from Unit 1 and Unit 2 residual heat removal (RHR) suction relief valves that discharged to the recycle holdup tank (RHUT). The NRC previously issued two NCVs regarding this issue and corrective actions to date have been incomplete. In addition to entering this issue into their CAP, planned corrective actions included the installation of approximately 20 pipe supports.

The inspectors determined that the performance deficiency was more than minor, because it was associated with the Barrier Integrity Cornerstone attribute of Design Control and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the licensee's existing design and piping configuration had not addressed water hammer effects when the Unit 1 and Unit 2 RHR suction relief valves were aligned to discharge to the RHUT. A ruptured RHUT

and/or associated piping outside of containment could adversely affect on-site and offsite dose consequences. An NRC Senior Reactor Analyst (SRA) performed a detailed risk evaluation and determination that the finding was of very low safety significance (i.e., Green). The finding had a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area because leaders at the station did not ensure that personnel, equipment, procedures, and other necessary resources were available and adequate to correct the condition adverse to quality (H.1).

Inspection Report# : [2015007](#) (*pdf*)

Significance:  Jun 19, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Maintain the Instrument Loops Used to Verify Compliance with the Containment Average Air Temperature TS Limit

The team identified a finding of very-low safety significance, and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure to have procedures to maintain the accuracy within necessary limits of the instrument loops used to verify compliance with the containment average air temperature TS limit of 120 degrees Fahrenheit. Specifically, in 2007, the licensee cancelled the periodic preventive maintenance (PM) intended to maintain the necessary instrument loops accuracy. The licensee entered this issue into their CAP and reasonably established that the 120 degrees Fahrenheit limit was not exceeded by reviewing applicable historical records from 2002 to time of this inspection.

The performance deficiency was determined to be more than minor because it was associated with the configuration control attribute of the Barrier Integrity Cornerstone, and adversely affected the cornerstone objective to ensure that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding screened as very-low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment or involved an actual reduction in hydrogen igniter function. Specifically, the containment integrity remained intact and the finding did not impact the hydrogen igniter function. The team determined that this finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not identify issues completely and accurately in accordance with the CAP. Specifically, on January 15, 2015, the licensee captured the lack of periodic PM activities for the containment air temperature instrument loops in the CAP. However, the licensee failed to completely and accurately identify the issue in that it was not treated as a CAQ. As a consequence, no corrective actions were implemented. [P.1]

Inspection Report# : [2015008](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : July 11, 2016

Byron 2

2Q/2016 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: FIN Finding

Failure to Perform ASME Code Case Required Extent of Condition to Identify Unacceptable Piping Flaws

Green. A finding of very-low safety significance was identified by the inspectors when, upon identification of a through-wall leak, the licensee declared the structural integrity of Class 3 fire protection piping to be operable, but failed to perform augmented examinations within 30 days as required by American Society of Mechanical Engineers (ASME) Code Case N-513-3. The licensee repaired the leaking pipe, and upon identification by the inspectors, documented the issue in their corrective action program (CAP) as IRs 2639930 and 2652145, and performed the required augmented examinations.

The inspectors determined the performance deficiency was more than minor because, if left uncorrected, the finding had the potential to lead to a more significant safety concern. Specifically, the augmented examinations identified a location where wall thickness measurements were below the acceptance criteria such that the pipe could have ruptured during a seismic event, impacting the functionality of the fire protection system and causing a flooding hazard in the auxiliary building. Because the finding involved an internal flooding hazard, a detailed risk evaluation was performed, which determined the finding to be of very low safety significance. The inspectors determined the finding had a cross-cutting aspect in the Problem Identification and Resolution area of Evaluation [P.2], because the licensee failed to thoroughly evaluate the issue to ensure that the resolution addressed the cause and extent of condition commensurate with the safety significance. Specifically, the licensee failed to complete the N-513-3 evaluation and perform the required extent of condition activities in a timely manner as specified by the ASME Code Case. (Section 1R12.1)

Inspection Report# : [2016002](#) (*pdf*)

Mitigating Systems

Significance:  Sep 18, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Evaluate the Impact of a FLEX-Related Configuration Change on Available DG Fuel Oil Margin.

A finding of very low safety significance and an associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the licensee failed to adequately consider the potential impact that a modification would have on the safety-related emergency diesel generator (DG) fuel oil supply credited for design basis events. Specifically, the DG fuel oil system was modified in a manner that reduced the DG fuel oil system train separation from two isolation valves to one isolation valve. The adverse impact of a leaking single isolation valve following the implementation of a diverse and flexible coping capability (FLEX) modification resulted in the IB DG fuel oil transfer pump(s) pumping fuel oil not only into its associated IB DG fuel oil day tank but also into the IA DG diesel oil storage tank (DOST). The safety-related 1B DG fuel oil system was categorized as a low margin system, and the inspectors identified that the licensee did not adequately follow the considerations

provided in the design change process for a low margin system. In addition to entering this issue into their CAP, immediate corrective actions included restoring the fuel oil configuration to the previous dual isolation configuration until long-term corrective actions could be developed.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding was of very low safety significance (Green) because the issue did not prevent the 1B DG from being able to operate for its mission time. The finding had a cross-cutting aspect in the Avoid Complacency component of the Human Performance cross-cutting area because the licensee failed to recognize that the configuration change resulted in the licensee operating the DG fuel oil system in a configuration that it had not routinely operated in, exposing previously unidentified deficiencies (H.12).

Inspection Report# : [2015007](#) (*pdf*)

Barrier Integrity

Significance:  Sep 18, 2015

Identified By: NRC

Item Type: VIO Violation

Failure to Analyze RHUT Inlet Piping Loads

The inspectors identified a finding of very low safety significance (Green) and an associated VIO of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to evaluate the effect of dynamic loads on inlet piping from Unit 1 and Unit 2 residual heat removal (RHR) suction relief valves that discharged to the recycle holdup tank (RHUT). The NRC previously issued two NCVs regarding this issue and corrective actions to date have been incomplete. In addition to entering this issue into their CAP, planned corrective actions included the installation of approximately 20 pipe supports.

The inspectors determined that the performance deficiency was more than minor, because it was associated with the Barrier Integrity Cornerstone attribute of Design Control and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the licensee's existing design and piping configuration had not addressed water hammer effects when the Unit 1 and Unit 2 RHR suction relief valves were aligned to discharge to the RHUT. A ruptured RHUT and/or associated piping outside of containment could adversely affect on-site and offsite dose consequences. An NRC Senior Reactor Analyst (SRA) performed a detailed risk evaluation and determination that the finding was of very low safety significance (i.e., Green). The finding had a cross-cutting aspect in the Resources component of the Human Performance cross-cutting area because leaders at the station did not ensure that personnel, equipment, procedures, and other necessary resources were available and adequate to correct the condition adverse to quality (H.1).

Inspection Report# : [2015007](#) (*pdf*)

Inspection Report# : [2016002](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Comply With Radiation Work Permit Requirements Resulting In An Unplanned Dose Rate Alarm

Green. A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 was self-revealed when an engineer violated a radiation work permit by entering an area that was outside of the scope of the radiation work permit (RWP), which resulted in the engineer receiving an unplanned electronic dosimeter dose rate alarm. After the engineer received the unplanned dose rate alarm, he immediately exited the area and reported the event to the radiation protection staff. The licensee entered this issue into their CAP as IR 02655195.

The inspectors determined that the performance deficiency was more than minor because the finding impacted the Program and Process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation.

Specifically, the engineer, by entering an area that he was not briefed to enter on the radiation work permit, removed a barrier that was intended to prevent workers from receiving unexpected dose. The finding was determined to be of very low safety significance in accordance with Inspection Manual Chapter (IMC) 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008. The violation was determined to be of very low safety significance (Green) because: (1) it did not involve as-low-as-reasonably-achievable (ALARA) planning or work controls; (2) there was no overexposure; (3) there was no substantial potential for an overexposure; and (4) the ability to assess dose was not compromised. The inspectors determined that the finding had a cross-cutting aspect in the Human Performance area of Challenging the Unknown [H.11] because the individual did not stop when faced with an uncertain condition. Specifically, risks were not evaluated and managed before proceeding. (Section 2RS1.6)

Inspection Report# : [2016002](#) (*pdf*)

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : August 29, 2016

Byron 2

3Q/2016 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: FIN Finding

Failure to Perform ASME Code Case Required Extent of Condition to Identify Unacceptable Piping Flaws

Green. A finding of very-low safety significance was identified by the inspectors when, upon identification of a through-wall leak, the licensee declared the structural integrity of Class 3 fire protection piping to be operable, but failed to perform augmented examinations within 30 days as required by American Society of Mechanical Engineers (ASME) Code Case N-513-3. The licensee repaired the leaking pipe, and upon identification by the inspectors, documented the issue in their corrective action program (CAP) as IRs 2639930 and 2652145, and performed the required augmented examinations.

The inspectors determined the performance deficiency was more than minor because, if left uncorrected, the finding had the potential to lead to a more significant safety concern. Specifically, the augmented examinations identified a location where wall thickness measurements were below the acceptance criteria such that the pipe could have ruptured during a seismic event, impacting the functionality of the fire protection system and causing a flooding hazard in the auxiliary building. Because the finding involved an internal flooding hazard, a detailed risk evaluation was performed, which determined the finding to be of very low safety significance. The inspectors determined the finding had a cross-cutting aspect in the Problem Identification and Resolution area of Evaluation [P.2], because the licensee failed to thoroughly evaluate the issue to ensure that the resolution addressed the cause and extent of condition commensurate with the safety significance. Specifically, the licensee failed to complete the N-513-3 evaluation and perform the required extent of condition activities in a timely manner as specified by the ASME Code Case. (Section 1R12.1)

Inspection Report# : [2016002](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Use Alteration Log Resulted in Fuel Oil Leak

Green. A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.4.1.a, "Written Procedures," was self-revealed on August 24, 2016, when a fuel oil leak of approximately one-eighth gallon per minute was identified coming from a tubing connection after the Unit 2 Train B (2B) DG was started for routine surveillance testing. Technicians replaced a fuel oil relay during the previous shift and did not use the procedurally required tools to track alterations made to each individual input line as required by MA-AA-716-100, "Maintenance Alteration Process." The issue was entered into the licensee's CAP as IR 02707888. As part of their corrective actions, the leak was promptly repaired by tightening the fitting after the diesel generator was shut down; and the technicians reviewed human performance error prevention techniques, including proper use of the Maintenance Alterations Log, with supervisors.

The inspectors determined that the issue was more than minor because it was associated with the Configuration Control attribute of the Mitigating Systems Cornerstone and adversely impacted the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to tighten all fittings during a maintenance activity resulted in a substantial fuel oil leak that could have resulted in a fire or could have impacted the availability of the diesel generator if the tubing had loosened further or become disconnected during a design basis event. The finding was determined to be of very low safety significance, or Green, in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," Appendix A, "The Significance Determination Process (SDP) For Findings at Power," because the inspectors answered Exhibit 2 – Mitigating Systems Screening Question A.1 as "Yes" since the diesel generator remained operable and functional until the fitting was repaired. The inspectors assigned a cross-cutting aspect in the Avoiding Complacency element of the Human Performance Area (IMC 0310 H.12) to this finding because judicious implementation of human performance error prevention tools could have prevented the failure to properly tighten the fitting, even if the Alterations Log was not used as required.

Inspection Report# : [2016003](#) (pdf)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance:  Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Comply With Radiation Work Permit Requirements Resulting In An Unplanned Dose Rate Alarm

Green. A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 was self-revealed when an engineer violated a radiation work permit by entering an area that was outside of the scope of the radiation work permit (RWP), which resulted in the engineer receiving an unplanned electronic dosimeter dose rate alarm. After the engineer received the unplanned dose rate alarm, he immediately exited the area and reported the event to the radiation protection staff. The licensee entered this issue into their CAP as IR 02655195.

The inspectors determined that the performance deficiency was more than minor because the finding impacted the Program and Process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. Specifically, the engineer, by entering an area that he was not briefed to enter on the radiation work permit, removed a barrier that was intended to prevent workers from receiving unexpected dose. The finding was determined to be of very low safety significance in accordance with Inspection Manual Chapter (IMC) 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008. The violation was determined to be of very low safety significance (Green) because: (1) it did not involve as-low-as-reasonably-achievable (ALARA) planning or work controls; (2) there was no overexposure; (3) there was no substantial potential for an overexposure;

and (4) the ability to assess dose was not compromised. The inspectors determined that the finding had a cross-cutting aspect in the Human Performance area of Challenging the Unknown [H.11] because the individual did not stop when faced with an uncertain condition. Specifically, risks were not evaluated and managed before proceeding. (Section 2RS1.6)

Inspection Report# : [2016002](#) (pdf)

Public Radiation Safety

Significance:  Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Properly Block and Brace a Radioactive Shipment for Transport

Green. A finding of very low safety significance and an associated NCV of 10 CFR 71.5(a) and 49 CFR 171.1(b)(12) was self-revealed when the licensee failed to properly block and brace a Radioactive Waste (Radwaste) Shipment that was shipped to a waste processing facility for disposal. The failure to properly block and brace the Radwaste Shipment caused a breach of the shipping package while in transit to the waste processing facility. When the shipment breach was discovered at the waste processing facility, contamination surveys were immediately conducted and it was determined that no loss of content had occurred during transportation. The surveys also determined that radiation dose limits from the package were below NRC and Department of Transportation (DOT) limits. The waste processing facility notified the licensee of the breach during transport and the licensee entered the event into their CAP as IR 02665985.

The inspectors determined that the issue was more than minor because it was associated with the Program and Process attribute of the Public Radiation Safety Cornerstone and adversely impacted the cornerstone objective of ensuring adequate protection to public health and safety from exposure to radiation from routine civilian nuclear operations. Specifically, the breach of the transportation package by its content could lead to the inadvertent spread of radioactive contamination to the public domain if conditions had been slightly altered. The finding was determined to be of very low safety significance, or Green, in accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008, because the finding did not involve: (1) a radioactive shipment above radiation limits; (2) a certificate of compliance issue; (3) the failure to make emergency notifications; or (4) a low-level burial issue. A breach of the transportation package occurred during transit. However, the shipment contained less than a Type A quantity of material (LSA II shipment), and there was no loss of package contents or radioactive contamination. The inspectors assigned a cross-cutting aspect in the Resources element of the Human Performance Area (IMC 0310 H.1) to this finding due to inadequate procedures. (Section 2RS8.4)

Inspection Report# : [2016003](#) (pdf)

Security

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Security

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Security

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Miscellaneous

Last modified : December 08, 2016

Byron 2

4Q/2016 Plant Inspection Findings

Initiating Events

Significance:  Jun 30, 2016

Identified By: NRC

Item Type: FIN Finding

Failure to Perform ASME Code Case Required Extent of Condition to Identify Unacceptable Piping Flaws

Green. A finding of very-low safety significance was identified by the inspectors when, upon identification of a through-wall leak, the licensee declared the structural integrity of Class 3 fire protection piping to be operable, but failed to perform augmented examinations within 30 days as required by American Society of Mechanical Engineers (ASME) Code Case N-513-3. The licensee repaired the leaking pipe, and upon identification by the inspectors, documented the issue in their corrective action program (CAP) as IRs 2639930 and 2652145, and performed the required augmented examinations.

The inspectors determined the performance deficiency was more than minor because, if left uncorrected, the finding had the potential to lead to a more significant safety concern. Specifically, the augmented examinations identified a location where wall thickness measurements were below the acceptance criteria such that the pipe could have ruptured during a seismic event, impacting the functionality of the fire protection system and causing a flooding hazard in the auxiliary building. Because the finding involved an internal flooding hazard, a detailed risk evaluation was performed, which determined the finding to be of very low safety significance. The inspectors determined the finding had a cross-cutting aspect in the Problem Identification and Resolution area of Evaluation [P.2], because the licensee failed to thoroughly evaluate the issue to ensure that the resolution addressed the cause and extent of condition commensurate with the safety significance. Specifically, the licensee failed to complete the N-513-3 evaluation and perform the required extent of condition activities in a timely manner as specified by the ASME Code Case. (Section 1R12.1)

Inspection Report# : [2016002](#) (*pdf*)

Mitigating Systems

Significance:  Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Use Alteration Log Resulted in Fuel Oil Leak

Green. A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.4.1.a, "Written Procedures," was self-revealed on August 24, 2016, when a fuel oil leak of approximately one-eighth gallon per minute was identified coming from a tubing connection after the Unit 2 Train B (2B) DG was started for routine surveillance testing. Technicians replaced a fuel oil relay during the previous shift and did not use the procedurally required tools to track alterations made to each individual input line as required by MA-AA-716-100, "Maintenance Alteration Process." The issue was entered into the licensee's CAP as IR 02707888. As part of their corrective actions, the leak was promptly repaired by tightening the fitting after the diesel generator was shut down; and the technicians reviewed human performance error prevention techniques, including proper use of the Maintenance Alterations Log, with supervisors.

The inspectors determined that the issue was more than minor because it was associated with the Configuration Control attribute of the Mitigating Systems Cornerstone and adversely impacted the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to tighten all fittings during a maintenance activity resulted in a substantial fuel oil leak that could have resulted in a fire or could have impacted the availability of the diesel generator if the tubing had loosened further or become disconnected during a design basis event. The finding was determined to be of very low safety significance, or Green, in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," Appendix A, "The Significance Determination Process (SDP) For Findings at Power," because the inspectors answered Exhibit 2 – Mitigating Systems Screening Question A.1 as "Yes" since the diesel generator remained operable and functional until the fitting was repaired. The inspectors assigned a cross-cutting aspect in the Avoiding Complacency element of the Human Performance Area (IMC 0310 H.12) to this finding because judicious implementation of human performance error prevention tools could have prevented the failure to properly tighten the fitting, even if the Alterations Log was not used as required.

Inspection Report# : [2016003](#) (pdf)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance:  Jun 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Comply With Radiation Work Permit Requirements Resulting In An Unplanned Dose Rate Alarm

Green. A finding of very low safety significance and an associated Non-Cited Violation (NCV) of Technical Specification 5.4.1 was self-revealed when an engineer violated a radiation work permit by entering an area that was outside of the scope of the radiation work permit (RWP), which resulted in the engineer receiving an unplanned electronic dosimeter dose rate alarm. After the engineer received the unplanned dose rate alarm, he immediately exited the area and reported the event to the radiation protection staff. The licensee entered this issue into their CAP as IR 02655195.

The inspectors determined that the performance deficiency was more than minor because the finding impacted the Program and Process attribute of the Occupational Radiation Safety Cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. Specifically, the engineer, by entering an area that he was not briefed to enter on the radiation work permit, removed a barrier that was intended to prevent workers from receiving unexpected dose. The finding was determined to be of very low safety significance in accordance with Inspection Manual Chapter (IMC) 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008. The violation was determined to be of very low safety significance (Green) because: (1) it did not involve as-low-as-reasonably-achievable (ALARA) planning or work controls; (2) there was no overexposure; (3) there was no substantial potential for an overexposure;

and (4) the ability to assess dose was not compromised. The inspectors determined that the finding had a cross-cutting aspect in the Human Performance area of Challenging the Unknown [H.11] because the individual did not stop when faced with an uncertain condition. Specifically, risks were not evaluated and managed before proceeding. (Section 2RS1.6)

Inspection Report# : [2016002](#) (pdf)

Public Radiation Safety

Significance:  Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Properly Block and Brace a Radioactive Shipment for Transport

Green. A finding of very low safety significance and an associated NCV of 10 CFR 71.5(a) and 49 CFR 171.1(b)(12) was self-revealed when the licensee failed to properly block and brace a Radioactive Waste (Radwaste) Shipment that was shipped to a waste processing facility for disposal. The failure to properly block and brace the Radwaste Shipment caused a breach of the shipping package while in transit to the waste processing facility. When the shipment breach was discovered at the waste processing facility, contamination surveys were immediately conducted and it was determined that no loss of content had occurred during transportation. The surveys also determined that radiation dose limits from the package were below NRC and Department of Transportation (DOT) limits. The waste processing facility notified the licensee of the breach during transport and the licensee entered the event into their CAP as IR 02665985.

The inspectors determined that the issue was more than minor because it was associated with the Program and Process attribute of the Public Radiation Safety Cornerstone and adversely impacted the cornerstone objective of ensuring adequate protection to public health and safety from exposure to radiation from routine civilian nuclear operations. Specifically, the breach of the transportation package by its content could lead to the inadvertent spread of radioactive contamination to the public domain if conditions had been slightly altered. The finding was determined to be of very low safety significance, or Green, in accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008, because the finding did not involve: (1) a radioactive shipment above radiation limits; (2) a certificate of compliance issue; (3) the failure to make emergency notifications; or (4) a low-level burial issue. A breach of the transportation package occurred during transit. However, the shipment contained less than a Type A quantity of material (LSA II shipment), and there was no loss of package contents or radioactive contamination. The inspectors assigned a cross-cutting aspect in the Resources element of the Human Performance Area (IMC 0310 H.1) to this finding due to inadequate procedures. (Section 2RS8.4)

Inspection Report# : [2016003](#) (pdf)

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

Miscellaneous

Last modified : February 01, 2017



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Byron 2 – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

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Initiating Events

Mitigating Systems

Significance: G May 19, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform 10 CFR 50.59 Evaluation for UFSAR Change (Section 1R17.1b)

Severity Level IV. The inspectors identified a Severity Level IV, Non-Cited Violation of 10 CFR 50.59, "Changes, Tests, and Experiments," Section(d)(1) and an associated finding of very low safety significance (Green) for the licensee's failure to provide a written evaluation which provided the basis for the determination that a change did not require a license amendment. Specifically, the licensee failed to provide a basis for why a change to the surveillance frequencies of emergency diesel generators described in the Updated Final Safety Analysis Report did not require prior NRC approval.

The inspectors determined that the performance deficiency was more than minor because the inspectors could not reasonably determine that the changes would not have ultimately required NRC prior approval. The associated finding screened to Green (very low safety significance) because it did not result in the loss of operability or functionality. The diesel generators passed their most recent surveillances. As a result the violation is categorized as Severity Level IV in accordance with section 6.1.d of the NRC Enforcement Policy. The issue did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R17.1b)

Inspection Report# : 2017009 (*pdf*)

Significance: G Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Use Alteration Log Resulted in Fuel Oil Leak

Green. A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.4.1.a, "Written Procedures," was self-revealed on August 24, 2016, when a fuel oil leak of approximately one-eighth gallon per minute was identified coming from a tubing connection after the Unit 2 Train B (2B) DG was started for routine surveillance testing. Technicians replaced a fuel oil relay during the previous shift and did not use the procedurally required tools to track alterations made to each individual input line as required by MA-AA-716-100, "Maintenance Alteration Process." The issue was entered into the licensee's CAP as IR 02707888. As part of their corrective actions, the leak was promptly repaired by tightening the fitting after the diesel generator was shut down; and the technicians reviewed human performance error prevention techniques, including proper use of the Maintenance Alterations Log, with supervisors.

The inspectors determined that the issue was more than minor because it was associated with the Configuration Control attribute of the Mitigating Systems Cornerstone and adversely impacted the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to tighten all fittings during a maintenance activity resulted in a substantial fuel oil leak that could have resulted in a fire or could have impacted the availability of the diesel generator if the tubing had loosened further or become disconnected during a design basis event. The finding was determined to be of very low safety significance, or Green, in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," Appendix A, "The Significance Determination Process (SDP) For Findings at Power," because the inspectors answered Exhibit 2 - Mitigating Systems Screening Question A.1 as "Yes" since the diesel generator remained operable and functional until the fitting was repaired. The inspectors assigned a cross-cutting aspect in the Avoiding Complacency element of the Human Performance Area (IMC 0310 H.12) to this finding because judicious implementation of human performance error prevention tools could have prevented the failure to properly tighten the fitting, even if the Alterations Log was not used as required.

Inspection Report# : 2016003 (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Properly Block and Brace a Radioactive Shipment for Transport

Green. A finding of very low safety significance and an associated NCV of 10 CFR 71.5(a) and 49 CFR 171.1(b)(12) was self-revealed when the licensee failed to properly block and brace a Radioactive Waste (Radwaste) Shipment that was shipped to a waste processing facility for disposal. The failure to properly block and brace the Radwaste Shipment caused a breach of the shipping package while in transit to the waste processing facility. When the shipment breach was discovered at the waste processing facility, contamination surveys were immediately conducted and it was determined that no loss of content had occurred during transportation. The surveys also determined that radiation dose limits from the package were below NRC and Department of Transportation (DOT) limits. The waste processing facility notified the licensee of the breach during transport and the licensee entered the event into their CAP as IR 02665985.

The inspectors determined that the issue was more than minor because it was associated with the Program and Process attribute of the Public Radiation Safety Cornerstone and adversely impacted the cornerstone objective of ensuring adequate protection to public health and safety from exposure to radiation from routine civilian nuclear operations. Specifically, the breach of the transportation package by its content could lead to the inadvertent spread of radioactive contamination to the public domain if conditions had been slightly altered. The finding was determined to be of very

low safety significance, or Green, in accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008, because the finding did not involve: (1) a radioactive shipment above radiation limits; (2) a certificate of compliance issue; (3) the failure to make emergency notifications; or (4) a low-level burial issue. A breach of the transportation package occurred during transit. However, the shipment contained less than a Type A quantity of material (LSA II shipment), and there was no loss of package contents or radioactive contamination. The inspectors assigned a cross-cutting aspect in the Resources element of the Human Performance Area (IMC 0310 H.1) to this finding due to inadequate procedures. (Section 2RS8.4)

Inspection Report# : 2016003 (*pdf*)

Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : August 03, 2017

Page Last Reviewed/Updated Friday, August 05, 2016



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Byron 2 – Quarterly Plant Inspection Findings

2Q/2017 – Plant Inspection Findings

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Initiating Events

Mitigating Systems

Significance: G May 19, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform 10 CFR 50.59 Evaluation for UFSAR Change (Section 1R17.1b)

Severity Level IV. The inspectors identified a Severity Level IV, Non-Cited Violation of 10 CFR 50.59, "Changes, Tests, and Experiments," Section(d)(1) and an associated finding of very low safety significance (Green) for the licensee's failure to provide a written evaluation which provided the basis for the determination that a change did not require a license amendment. Specifically, the licensee failed to provide a basis for why a change to the surveillance frequencies of emergency diesel generators described in the Updated Final Safety Analysis Report did not require prior NRC approval.

The inspectors determined that the performance deficiency was more than minor because the inspectors could not reasonably determine that the changes would not have ultimately required NRC prior approval. The associated finding screened to Green (very low safety significance) because it did not result in the loss of operability or functionality. The diesel generators passed their most recent surveillances. As a result the violation is categorized as Severity Level IV in accordance with section 6.1.d of the NRC Enforcement Policy. The issue did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R17.1b)

Inspection Report# : 2017009 (*pdf*)

Significance: G Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Use Alteration Log Resulted in Fuel Oil Leak

Green. A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.4.1.a, "Written Procedures," was self-revealed on August 24, 2016, when a fuel oil leak of approximately one-eighth gallon per minute was identified coming from a tubing connection after the Unit 2 Train B (2B) DG was started for routine surveillance testing. Technicians replaced a fuel oil relay during the previous shift and did not use the procedurally required tools to track alterations made to each individual input line as required by MA-AA-716-100, "Maintenance Alteration Process." The issue was entered into the licensee's CAP as IR 02707888. As part of their corrective actions, the leak was promptly repaired by tightening the fitting after the diesel generator was shut down; and the technicians reviewed human performance error prevention techniques, including proper use of the Maintenance Alterations Log, with supervisors.

The inspectors determined that the issue was more than minor because it was associated with the Configuration Control attribute of the Mitigating Systems Cornerstone and adversely impacted the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to tighten all fittings during a maintenance activity resulted in a substantial fuel oil leak that could have resulted in a fire or could have impacted the availability of the diesel generator if the tubing had loosened further or become disconnected during a design basis event. The finding was determined to be of very low safety significance, or Green, in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," Appendix A, "The Significance Determination Process (SDP) For Findings at Power," because the inspectors answered Exhibit 2 - Mitigating Systems Screening Question A.1 as "Yes" since the diesel generator remained operable and functional until the fitting was repaired. The inspectors assigned a cross-cutting aspect in the Avoiding Complacency element of the Human Performance Area (IMC 0310 H.12) to this finding because judicious implementation of human performance error prevention tools could have prevented the failure to properly tighten the fitting, even if the Alterations Log was not used as required.

Inspection Report# : 2016003 (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Properly Block and Brace a Radioactive Shipment for Transport

Green. A finding of very low safety significance and an associated NCV of 10 CFR 71.5(a) and 49 CFR 171.1(b)(12) was self-revealed when the licensee failed to properly block and brace a Radioactive Waste (Radwaste) Shipment that was shipped to a waste processing facility for disposal. The failure to properly block and brace the Radwaste Shipment caused a breach of the shipping package while in transit to the waste processing facility. When the shipment breach was discovered at the waste processing facility, contamination surveys were immediately conducted and it was determined that no loss of content had occurred during transportation. The surveys also determined that radiation dose limits from the package were below NRC and Department of Transportation (DOT) limits. The waste processing facility notified the licensee of the breach during transport and the licensee entered the event into their CAP as IR 02665985.

The inspectors determined that the issue was more than minor because it was associated with the Program and Process attribute of the Public Radiation Safety Cornerstone and adversely impacted the cornerstone objective of ensuring adequate protection to public health and safety from exposure to radiation from routine civilian nuclear operations. Specifically, the breach of the transportation package by its content could lead to the inadvertent spread of radioactive contamination to the public domain if conditions had been slightly altered. The finding was determined to be of very

low safety significance, or Green, in accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008, because the finding did not involve: (1) a radioactive shipment above radiation limits; (2) a certificate of compliance issue; (3) the failure to make emergency notifications; or (4) a low-level burial issue. A breach of the transportation package occurred during transit. However, the shipment contained less than a Type A quantity of material (LSA II shipment), and there was no loss of package contents or radioactive contamination. The inspectors assigned a cross-cutting aspect in the Resources element of the Human Performance Area (IMC 0310 H.1) to this finding due to inadequate procedures. (Section 2RS8.4)

Inspection Report# : 2016003 (*pdf*)

Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : September 05, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017



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Byron 2 – Quarterly Plant Inspection Findings

3Q/2017 – Plant Inspection Findings

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Initiating Events

Mitigating Systems

Significance: G May 19, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform 10 CFR 50.59 Evaluation for UFSAR Change (Section 1R17.1b)

Severity Level IV. The inspectors identified a Severity Level IV, Non-Cited Violation of 10 CFR 50.59, "Changes, Tests, and Experiments," Section(d)(1) and an associated finding of very low safety significance (Green) for the licensee's failure to provide a written evaluation which provided the basis for the determination that a change did not require a license amendment. Specifically, the licensee failed to provide a basis for why a change to the surveillance frequencies of emergency diesel generators described in the Updated Final Safety Analysis Report did not require prior NRC approval.

The inspectors determined that the performance deficiency was more than minor because the inspectors could not reasonably determine that the changes would not have ultimately required NRC prior approval. The associated finding screened to Green (very low safety significance) because it did not result in the loss of operability or functionality. The diesel generators passed their most recent surveillances. As a result the violation is categorized as Severity Level IV in accordance with section 6.1.d of the NRC Enforcement Policy. The issue did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R17.1b)

Inspection Report# : 2017009 (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : November 29, 2017

Page Last Reviewed/Updated Monday, November 06, 2017



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Byron 2 – Quarterly Plant Inspection Findings

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Initiating Events

Mitigating Systems

Significance: G Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Prevent Secondary Missiles Following a Postulated HELB

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to ensure that the design basis for the main steam safety valve (MSSV) room maintenance hatches was maintained. Specifically, the high energy line break (HELB) analysis performed for the MSSV rooms and steam tunnels prior to initial construction concluded that no secondary missiles were generated as a result of a HELB although maintenance hatches in the ceiling of the MSSV rooms were identified to become secondary missiles following a HELB in the MSSV rooms and steam tunnels. As part of their immediate corrective actions, the licensee entered this issue into their corrective action program (CAP) as AR 4075608 and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors answered "Yes" to Question 1, "If the finding is a deficiency affecting the design or qualification of a mitigating SSC [Structure, System, and Component], does the SSC maintain its

operability or functionality?? because the finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 71111.15)

Inspection Report# : 2017010 (*pdf*)

Significance:  Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Blow Out Panel Design Control

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, ?Design Control,? when the licensee originally designed the MSSV blow out panels in a manner that prevented them from functioning properly. The licensee entered this issue into their CAP as AR 4075608 and corrected the design issue in March of 2009.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). In accordance with IMC 0609, ?Significance Determination Process,? Attachment 0609.04, ?Initial Characterization of Findings,? and Appendix A, ?The Significance Determination Process for Findings At-Power,? Exhibit 2, ?Mitigating Systems Screening Questions,? the inspectors answered ?Yes? to Question 1, ?If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?? because the finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 40A2.1.a.(1))

Inspection Report# : 2017010 (*pdf*)

Significance:  Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Properly Correct Errors in Design Analysis for Main Steam Line Break in Main Steam Tunnel

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, ?Corrective Action,? when the licensee failed to promptly correct errors in the design

analysis for a main steam line break in the main steam tunnel. As part of their immediate corrective actions, the licensee entered this issue into their CAP as AR 4075608 and completed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors answered "Yes" to Question 1, "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" because the finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 40A2.1.a.(2))

Inspection Report# : 2017010 (*pdf*)

Significance:  Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Untimely Corrective Action for Secondary Missiles

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," when the licensee failed to promptly address the identification of secondary missiles following a HELB event. As part of their immediate corrective actions, the licensee entered this issue into their CAP as AR 4075608 and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors answered "Yes" to Question 1, "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" because the finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 40A2.1.a.(3))

Inspection Report# : 2017010 (*pdf*)

Significance: G Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inaccurate Analysis of Record

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when the licensee failed to maintain an accurate and up-to-date analysis of record for a postulated HELB in the MSSV rooms and steam tunnels. As part of their immediate corrective actions, the licensee entered this issue into their CAP as AR 4075608 and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors answered "Yes" to Question 1, "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" because the finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 40A2.1.a.(4))

Inspection Report# : 2017010 (*pdf*)

Significance: G May 19, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform 10 CFR 50.59 Evaluation for UFSAR Change (Section 1R17.1b)

Severity Level IV. The inspectors identified a Severity Level IV, Non-Cited Violation of 10 CFR 50.59, "Changes, Tests, and Experiments," Section(d)(1) and an associated finding of very low safety significance (Green) for the licensee's failure to provide a written evaluation which provided the basis for the determination that a change did not require a license amendment. Specifically, the licensee failed to provide a basis for why a change to the surveillance frequencies of emergency diesel generators described in the Updated Final Safety Analysis Report did not require prior NRC approval.

The inspectors determined that the performance deficiency was more than minor because the inspectors could not reasonably determine that the changes would not have ultimately required NRC prior approval. The associated finding screened to Green (very low safety significance) because it did not result in the loss of operability or functionality. The diesel generators passed their most recent surveillances. As a result the violation is categorized as Severity Level IV in accordance with section 6.1.d of the NRC Enforcement Policy. The issue did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R17.1b)

Inspection Report# : 2017009 (*pdf*)

Barrier Integrity
Emergency Preparedness
Occupational Radiation Safety
Public Radiation Safety
Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : February 01, 2018

Page Last Reviewed/Updated Monday, November 06, 2017