

## Clinton

# 1Q/2005 Plant Inspection Findings

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### Initiating Events

**Significance:**  Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO ESTABLISH ADEQUATE COMPENSATORY ACTIONS (HOURLY FIRE WATCH) ACCORDING TO FIRE PROTECTION PROGRAM PROCEDURES.**

A finding of very low safety significance was identified by the inspectors on March 17, 2005, for a violation of license-required fire protection program requirements. The licensee failed to establish adequate hourly fire watches for a failed ionization detector as required by the approved fire protection program procedure. Following the inspectors' identification of this issue, the licensee established an hourly fire watch that met the requirements and recommendations of the licensee's approved fire protection program procedures.

This finding was more than minor because if left uncorrected, it could become a more significant safety concern. The licensee's ability to quickly detect a fire in the area was impaired due to an insufficient number of smoke detectors. The issue was of very low safety significance because the fire protection element impacted by the finding was still expected to provide some defense-in-depth benefit due to a second fire detector located in the room. Additionally, there were two nearby hose stations which could be used for fire suppression activities. The issue was a Non-Cited Violation of the facility operating license section 2.F which required the implementation of the fire protection program.

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

**Significance:**  Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

#### **PORTABLE FIRE EXTINGUISHER MISSING FROM ITS DESIGNATED STORAGE.**

A finding of very low safety significance was identified by the inspectors for a violation of license-required fire protection program requirements. The licensee had removed a portable fire extinguisher from its designated storage location on the 828 foot elevation of containment and could not locate it. The fire marshal quickly replaced the missing extinguisher and conducted a walkdown of the containment to ensure no other portable fire extinguishers were missing from their required locations.

This finding was more than minor because left uncorrected, it would become a more significant safety concern. The licensee's ability to cope with fires of limited size in the area was impaired due to the insufficient number of extinguishers. The issue was of very low safety significance because there were two nearby hose stations which could be used for fire suppression activities. The issue was a Non-Cited Violation of the facility operating license section 2.F which required the implementation of the fire protection program.

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

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### Mitigating Systems

**Significance:**  Sep 30, 2004

Identified By: NRC

Item Type: FIN Finding

#### **DIVISION-3 ESSENTIAL SWITCHGEAR HEAT REMOVAL (VX) SYSTEM TRIPPED DUE TO INADEQUATE IMPACT STATEMENT FOR MAINTENANCE.**

A finding of very low safety significance was self-revealed during a maintenance activity when Division essential switchgear heat removal was lost as a result of an inadequate impact statement in the work order. The primary cause of this finding was related to the cross-cutting area of Human Performance. In addition to the maintenance planner missing the relationship between the safety and non-safety supply fan motors, several other opportunities to identify this inadequate impact statement were missed.

This finding was more than minor because with the division three essential switchgear heat removal system unavailable, the high pressure core spray system may be rendered inoperable. The issue was of very low safety significance because the initial temperature in the division three switchgear room was low and the loss of essential switchgear heat removal was of short duration, the high pressure core spray system was never actually inoperable. No violation of NRC requirements occurred.

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

**G****Significance:** Jul 26, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO HAVE AN ADEQUATE OPERATING PROCEDURE**

A finding of very low safety significance, with an associated Non-Cited Violation, was self-revealed. Specifically, Clinton Power Station Procedure 3312.03, "Shutdown Cooling and Fuel Pool Cooling and Assist," was inadequate because it allowed the operators to create voids inside system piping while preparing to place the "B" residual heat removal (RHR) system in the shutdown cooling mode of operation. When sufficient differential pressure developed to open the RHR pump discharge check valve, about 2000 gallons of water unexpectedly drained from the reactor pressure vessel into the RHR system and produced a reactor automatic shutdown signal and Level 3 isolation on low reactor water level. The "B" RHR system was subsequently declared inoperable.

The finding was more than minor because it affected the Reactor Safety/Mitigating System Cornerstone and if left uncorrected, it would become a more significant safety concern. Specifically, voided piping could produce a system water hammer when the residual heat removal water pump is started in shutdown cooling mode and render the system inoperable. The finding was determined to be 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 licensee revised the shutdown cooling steps in the procedure, briefed all operators on the apparent cause, and entered the event into its corrective action system. The issue was a Non-Cited Violation of Criterion V of 10 CFR 50 Appendix B.

Inspection Report# : [2004007\(pdf\)](#)**G****Significance:** Jul 26, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO MAKE PLANT PERSONNEL AWARE OF A MODIFICATION WHICH MAY AFFECT THE PERFORMANCE OF THEIR DUTIES**

A finding of very low safety significance, with an associated Non-Cited Violation, was identified by the inspectors. Specifically, the licensee failed to analyze how a feedwater pump modification affected the operator's duties after an automatic shutdown. As a result of the modification, operators should have been directed, by procedure and training, to trip the "B" feedwater pump following an automatic shutdown. One of the causes of this finding related to the cross-cutting area of problem identification and resolution, in that, the licensee did not identify the discrepant procedure or training during investigation of a previous event.

The issue was more than minor because if left uncorrected, it could be reasonably viewed as a precursor to a significant event. Specifically, it caused unnecessary complications to the automatic shutdown sequence, placed extra importance on the motor-driven reactor feedwater (MDRF) pump and could challenge the high-pressure emergency core cooling systems (ECCS) during a motor-driven feedwater pump outage. The inspectors determined that the finding could not be evaluated 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 because the MDRF pump did start and the high pressure ECCS systems were operable. The finding was assigned to the mitigating system cornerstone. The issue was a Non-Cited Violation of Criterion II of 10 CFR 50 Appendix B. The licensee took immediate corrective action to revise the procedure, installed a robust barrier over the "A" feedwater pump control switch, and briefed all operators on the effects of the modification.

Inspection Report# : [2004007\(pdf\)](#)**G****Significance:** Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**SLC BORON CONCENTRATION OUTSIDE TS LIMITS FOR GREATER THAN ALLOWED OUTAGE TIME.**

A finding of very low safety significance was identified by the inspectors for the licensee's failure to take timely corrective actions after discovering that the standby liquid control (SLC) tank air-paring valve was in the wrong position for about 2 months. This resulted in the boron concentration in the tank being outside the Technical Specification allowed limits for greater than the Technical Specification allowed action time. Once identified, the licensee restored the concentration in the tank to within acceptable limits. This finding was related to the Problem Identification and Resolution crosscutting area, in that, the concentration in the tank remained outside limits due to the licensee's failure to identify the impact of evaporation on the solution.

The finding was more than minor because the boron concentration being outside the Technical Specification allowed range affects the cross-cutting attribute of SLC system performance and also affected the SLC system's availability, reliability, and capability of responding to plant events. The finding was of very low safety significance because the as-found concentration, although above technical specification limits, did not impact the safety function of the pumps. The finding was a Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI which requires conditions adverse to quality be promptly identified and corrected.

Inspection Report# : [2004005\(pdf\)](#)**G****Significance:** Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO IMPLEMENT A LOCKED VALVE PROCEDURE.**

A finding of very low safety significance was identified by the inspectors for the licensee's failure to implement a procedure to control locked valves. Failing to have a locked valve procedure, combined with a shift supervisor marking the step which verified the position of the standby liquid control (SLC) tank air-sparging valve as "not applicable," based on the valve being a "locked valve" and no work having been done to the valve, allowed the air sparging valve to remain mispositioned while transitioning to Mode-2 and during Mode-1 operations. Once identified, the licensee placed the valve in the correct position. This issue was related to the Human Performance corsscutting area, in that, the failure to implement a procedure resulted in a mispositioned valve.

The finding was more than minor because the open air sparging valve created the potential for air-binding the pumps used to inject boron solution into the reactor, affecting the ability of the SLC system to shut the reactor down from a full power situation in the control rods failed to insert on a scram condition. The finding was of very low safety-significance because the deficiency, once evaluated, did not result in a loss of function per Generic Letter 91-18. The finding was a Non-Cited Violation of Technical Specification 5.4 which required the implementation of written procedures to control the locked valves in the plant.

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

**G**

**Significance:** Apr 07, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO IDENTIFY THE EXTENT OF CONDITION FOR INCORRECT FUSES IN THE REACTOR PROTECTION SYSTEM.**

The inspectors identified a finding of very low safety significance concerning the licesnee's failure to determine the extent of condition for improper fuses installed in the reactor protection system (RPS) electronic circuit boards. This finding was determined to be a Non-Cited Violation of 10 CFR 50 Appendix B, Criterion XVI.

This finding is more than minor because it affects the design and reliability of the RPS to perform its protective function of protecting the reactor core and containment. The licensee determined that although the fuses were improperly sized, the reactor protection system remained operable and could perfrom it's safety function. Therefore, this finding was determined to be of very low safety significance.

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

**G**

**Significance:** Apr 07, 2004

Identified By: NRC

Item Type: FIN Finding

**FAILURE TO EVALUATE THE EXTENT OF CONDITION OF FOREIGN MATERIAL FOUND IN THE DIVISION 1 EMERGENCY DIESEL GENERATOR STARTING AIR SYSTEM.**

The team identified a finding of very low safety significance when the licensee failed to take appropriate steps to evaluate the extent of condition of foreign material in the starting air system of an emergency diesel generator.

The finding is more than minor because it is associated with the Mitigating System (MS) cornerstone attribute of equipment reliability and capability of systems that respond to initiating events to prevent undesirable circumstances. This finding was of very low safety significance because once evaluated, it did not result in a loss of function per Generic Letter 91-18 (Rev 1). No vilations of NRC requirements were identified. The licensee documented this issue in condition report 213491. Additionally the licensee established action items to evaluate the source of the foregin material found in the 1A Diesel Generator air system following the March 2004 failure.

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

## Barrier Integrity

**G**

**Significance:** Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO FOLLOW PROCEDURE AND APPROPRIATELY ANNOTATE PORTIONS AS NOT APPLICABLE DURING THE PERFORMANCE OF REQUIRED CALIBRATION PROCEDURE IN ACCORDANCE WITH TS 5.4.1.**

Through a self-revealing event (unexpected de-energized relay found during maintenance) the inspectors identified a Non-Cited Violation (NCV) of very low safety signficiance. This finding resulted from licensee personnel incorrectly designating procedural steps as not applicable during the performance of a calibration procedure, Clinton Power Station (CPS) 9432.60, "Channel Functional Test for Containment Building Exhaust Radiation Monitor," required by Technical Specifications. In Issue Report (IR) 289643, the licensee documented that with the realy de-energized the affected primary containment isolation valve cannot by opened without taking the corresponding Division 2 LOCA BYPASS switch to the BYPASS position (an action administratively controlled by Operations).

The inspectors determined that the finding was greater than minor because this issue could be reasonably viewed as a precursor to a more

significant event. Additionally, this finding was associated with the Barrier Integrity Cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radioactive releases caused by accidents or events. The finding was of very low safety significance because this issue did not cause an actual open pathway in the physical integrity of reactor containment. The licensee documented the issue in IR 289643 and generated corrective actions as the result of a human performance investigation report being performed. These corrective actions included revising CPS 9432.60 to clearly identify the reason for placing the switch to BYPASS.

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

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## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Jun 30, 2004

Identified By: NRC

Item Type: FIN Finding

### **FAILURE TO MAINTAIN COLLECTIVE DOSES ALARA FOR RWP NO. 10002827.**

A finding of very low safety significance was identified by the inspectors when the collective dose for RWP No. 10002827, "Drywell SRV Replacement," exceeded 5 person-rem and exceeded the licensee's dose estimate by more than 50 percent. This finding was related to the Human Performance cross-cutting area, in that, radiation protection personnel did not adequately evaluate the radiological consequences of a first-time evolution (i.e., the enhanced cool-down process). The Problem Identification and Resolution cross-cutting area was impacted, in that, the licensee did not identify the increased contact dose rates, which resulted in unplanned, unintended occupational collective dose for the work activity in a timely manner. This resulted in the total collective dose for the RWP of 11.839 person-rem versus a reasonable re-estimate of 6.043 person-rem.

This issue was determined to be more than minor in that it was associated with the As Low As is Reasonably Achievable (ALARA) planning/dose projection 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. The finding involved ALARA planning/work controls; however, the licensee's current 3-year rolling collective dose average was not greater than 240 person-rem per unit. Therefore, the finding was of very low safety significance. No violation of NRC requirements was identified.

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

**Significance:**  Jun 30, 2004

Identified By: NRC

Item Type: FIN Finding

### **FAILURE TO MAINTAIN COLLECTIVE DOSES ALARA FOR RWP NO. 10002830.**

A finding of very low safety significance was identified by the inspectors when the collective dose for RWP No. 10002830, "Drywell Main Steam and Feedwater Work," exceeded 5 person-rem and exceeded the dose estimate by more than 50 percent. This finding was related to the Human Performance cross-cutting area, in that, radiation protection personnel did not adequately evaluate the radiological consequences of a first-time evolution (i.e., the enhanced cool-down process). The Problem Identification and Resolution cross-cutting area was impacted, in that, the licensee did not identify the increased contact dose rates, which resulted in unplanned, unintended occupational collective dose for the work activity in a timely manner. This resulted in the total collective dose for the RWP of 5.405 person-rem versus an estimate of 1.455 person-rem.

This issue was determined to be more than minor, in that, it was associated with the As Low As is Reasonably Achievable (ALARA) planning/dose projection 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. The finding involved ALARA planning/work controls; however, the licensee's current 3-year rolling collective dose average was not greater than 240 person-rem per unit. Therefore, the finding was of very low safety significance. No violation of NRC requirements was identified.

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

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## Public Radiation Safety

**Significance:**  Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO MAINTAIN CONTROL OF LICENSED RADIOACTIVE MATERIAL IN ACCORDANCE WITH 10 CFR 20, SUBPART 1.**

A finding of very low safety significance and an associated Non-Cited Violation were identified through a self-revealing event on October 7, 2004, when licensee personnel discovered that three nuclear instrument detectors (containing a very small amount of radioactive material) were not adequately controlled. Licensee personnel believed that the material was contained in a small container which was sealed in 1991 as part of a disposition plan for the defective instruments. The licensee' search of other material containers and documentation failed to identify the final disposition of the radioactive material.

The issue was more than minor because it was associated with the Human Performance and Programs/Process attributes of the Public Radiation Safety Cornerstone and affected the cornerstone objective of ensuring adequate protection of public health and safety from exposure to radioactive materials potentially released into the public domain. Based on various dose calculation scenarios, the very small amount of missing radioactive material would contribute a negligible radiological dose if a member of the public were to be exposed to the material. Additionally, the inspectors determined that the licensee did not have any prior radioactive material control occurrences in the previous 8 quarters. Therefore, the finding was of very low safety significance. The licensee's corrective actions for this issue included the development of procedural guidance which prohibits removing nuclear instrument detectors from the cabling as part of a disposition plan for defective units. One Non-Cited Violation for the failure to control licensed radioactive material in accordance with 10 CFR 20, Subpart 1, was identified. Inspection Report# : [2005003\(pdf\)](#)

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## Physical Protection

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

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## Miscellaneous

Last modified : June 17, 2005