

Dresden 3

1Q/2005 Plant Inspection Findings

Initiating Events

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Significance: Nov 12, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation

Unexpected Control Rod Motion During Surveillance Testing

On November 12, 2004, a performance deficiency was self-revealed when operators were performing surveillance procedure DOS 500-07, "Reactor Mode Switch in Shutdown Functional and Scram Auxiliary Functions Valve Operability Test," Revision 21. The operators manually scrambled the plant with the expectation of no rod movement with the reactor in Mode 5. Ten control rods moved after the mode switch was taken to shutdown. The surveillance test procedure had a prerequisite, Step E.2.a, that stated, "If fuel is in the reactor vessel, then verify all control rods are fully inserted or control rods are removed per DOP 300-18." Not all the control rods were fully inserted because some had been replaced and were in the process of being vented. The venting procedure opened the 3-0305-101 and 3-0305-102 valves. These were the control rod piston inlet and outlet valves. The open position of these valves allowed a flow path that caused the rods to insert when the scram signal was inserted. The crew knew that the valves were open but did not understand that the equipment lineup would cause the control rods to insert. The operating crew did not understand and therefore did not meet the procedure prerequisite. The primary cause of this violation was related to the cross-cutting area of Human Performance.

The finding was greater than minor because if left uncorrected the failure to adhere to surveillance test prerequisites could become a more significant safety concern. The inspectors completed a Phase 1 significance determination of this issue using IMC 0609, "Significance Determination Process," Appendix G, Check List 7, dated May 25, 2004. The three areas listed in the checklist that would require a Phase 2 or 3 analysis, and therefore indicate a more significant issue, were not applicable to this finding. Therefore, the inspectors concluded that the finding was of very low safety significance. Operations personnel were temporarily removed from duties, all control rod drive blades involved and adjacent fuel were inspected using cameras, hydraulic control units for the control rod drives were walked down to verify valve positions, and all operations personnel were briefed on this event. This issue was a Non-Cited Violation of Technical Specification 5.4.1, which required the implementation of written surveillance procedures for the control rod drive system. (Section 1R22)

Inspection Report# : [2004013\(pdf\)](#)

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Significance: May 14, 2004
Identified By: NRC
Item Type: FIN Finding

Failure to perform preventive and corrective maintenance on Switchyard Breaker 8-15 which resulted in the failure of Breaker 8-15 to open and Unit 3 automatic scram and Loss of Offsite Power

A self-revealed finding was identified for the failure to perform the appropriate preventive and corrective maintenance on Switchyard Breaker 8-15 which resulted in the failure of Breaker 8-15 to open fully when manipulated by operations personnel on May 5, 2004. The failure of the 'C' Phase of Breaker 8-15 to fully open when the 'A' and 'B' phases opened caused significant current imbalances in the Unit 2 and Unit 3 switchyards. These imbalances caused the automatic reactor scram of Unit 3 from full power and the subsequent loss of offsite power to both Unit 3 Emergency Core Cooling System Busses. The finding was not considered a violation of regulatory requirements.

The inspection team determined that this finding was more than minor because the finding was associated with an increase in the likelihood of an initiating event, Loss of Offsite Power. The initial Phase 1 and Phase 2 SDP risk assessment characterized this finding as potentially risk significant using the benchmarked site specific Risk-Informed Inspection Notebook. However, a Phase 3 analysis performed by the Senior Reactor Analyst determined the issue was of very low safety significance, after evaluating the actual increase in initiating event frequency. The Senior Reactor Analyst concluded the safety significance of the inspection finding based on the change in core damage frequency and large early release frequency was of very low safety significance (Green). As a remedial corrective action, the licensee and Exelon Energy Delivery personnel performed the appropriate corrective maintenance on Breaker 8-15 to preclude repetition. The licensee and Exelon Energy Delivery personnel continued to evaluate the root and contributing causes of the event, as well as long-term corrective actions, at the end of the inspection period. (Section 4OA3.2)

Inspection Report# : [2004009\(pdf\)](#)

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Significance: Apr 04, 2004
Identified By: NRC
Item Type: FIN Finding

Several Performance Issues Which Resulted in an Automatic Scram Due to Malfunction of the Main Turbine Master Trip Solenoid Valves During Turbine Weekly Testing

A self-revealed finding was identified involving a performance issue which resulted in the initiation of an automatic scram on Unit 3 on

January 24, 2004, due to malfunction of the main turbine master trip solenoid valves. The performance issue was the licensee's failure to adequately evaluate newly designed master trip solenoid valves.

The finding was more than minor because it affected the initiating events cornerstone objective to limit the likelihood of an initiating event. The finding was determined to be of very low safety significance (Green) because all equipment and systems operated as designed during the scram. The licensee identified a number of corrective actions including immediately replacing the Unit 3 master trip solenoid valves with the original design, scheduling the replacement of the Unit 2 master trip solenoid valves during an upcoming maintenance outage, and training engineering staff on the importance of evaluating critical parameters of newly designed and procured items.

Inspection Report# : [2004002\(pdf\)](#)

Mitigating Systems

Significance:  Jan 05, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Performance Deficiency While Performing Surveillance Procedure DIS 700-02, "APRM/RBM [average power range monitor/rod block monitor] Flow Instrumentation Total Drive Flow Adjustment," Revision 16

On January 5, 2005, a performance deficiency involving a Non-Cited Violation of Technical Specification 5.4.1 was self revealed when instrument maintenance technicians were performing Dresden Instrument Surveillance 700-02, "APRM/RBM [average power range monitor/rod block monitor] Flow Instrumentation Total Drive Flow Adjustment," Revision 16. The technicians misadjusted the recirculation flow signal to the reactor protection system which required entry into Technical Specification 3.3.1.1 Limiting Condition for Operation A.1 and C.1 for Average Power Range Monitor Channels 1, 2, and 3 Flow Bias Trips. The instrument maintenance technicians were using the averaging function of a Fluke 189 digital multi-meter. The technicians had not been trained on how to use the function and the procedure did not provide instructions on how to use the multi-meter. The mis-use of the averaging function resulted in adjusting the recirculation flow converter signal too high.

The finding was greater than minor because it impacted the Mitigating System Cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events and because it affected the procedure quality of a surveillance test procedure. The finding was of very low safety significance because it impacted the reactor protection system for a time period of less than 1 minute. The surveillance test procedure was changed to include instructions on how to use the averaging function of a digital multi-meter and the instrument maintenance technicians were briefed on this event and trained on how to use the averaging function of the digital multi-meter. (Section 1R22)

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

Significance:  Nov 13, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Failure to Adequately Ensure That a Contract Worker Followed Station Standards While Working in an Area Flagged with a Protected Pathway Sign

A self revealed finding of very low safety significance was identified involving a Non-Cited Violation of Technical Specification 5.4.1. On November 13, 2004, a licensee contracted worker failed to follow station procedures and standards and ignored protected pathway equipment signs. This error resulted in the temporary loss of power to station safety related systems. The worker was performing electrical work, when he inadvertently operated the bus 39 to bus 38 crosstie breaker, causing it to trip. Work was stopped, power was restored back to station loads in less than 1 hour, and the worker was counseled. By the end of the report period the licensee had not completed their Apparent Cause Evaluation to further discuss corrective actions. The primary cause of this violation was related to the cross-cutting area of Human Performance.

This finding was greater than minor because if maintenance personnel continued to perform unrestrained work within protected pathway boundaries it would become a more significant safety concern. The finding was of very low safety significance because the operators rapidly restored power to station loads, other mitigating systems were available, and the total exposure time was short. (Section 1R20.1.(2))

Inspection Report# : [2004013\(pdf\)](#)

Significance:  Oct 08, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Source of Make-up Water

A finding of very low significance was identified by the inspectors on June 5, 2004, involving a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." The abnormal operating procedure instructions for response to external flooding, and surveillance test procedure for the diesel driven pump necessary to provide make-up to the isolation condenser for response to external flooding, were not adequate for the circumstances. The licensee planned to change the surveillance test procedure and perform a full flow test of the pump in the near future. The licensee planned to review the abnormal operating procedure and revise the procedure as appropriate.

This finding was more than minor because it affected the equipment performance and procedure quality attributes of the mitigating systems cornerstone, and affected the cornerstone objective of ensuring the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The issue was of very low safety significance based on the low initiating event probability, and because of the slow onset of the flooding and the reduced decay heat in the reactor core at the time recovery actions would be necessary, the licensee would be able to reasonably perform recovery actions that would prevent core damage.

Inspection Report# : [2004010\(pdf\)](#)

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Significance: Oct 08, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Prevent Recurrence of Inoperable Condenser Low Vacuum Reactor Protection System Switches

A finding of very low significance was identified on July 1, 2004, by the inspectors involving a Non-Cited Violation of Technical Specification 3.3.1.1. The licensee failed to take adequate corrective actions to prevent recurrence of inoperable condenser low vacuum reactor protection system switches, failed to recognize the switches were inoperable, and failed to enter the appropriate Technical Specification Limiting Condition for Operation when the 3C and 2A turbine main condenser low vacuum reactor protection system scram channels were inoperable. The primary cause of the violation was related to the cross-cutting area of Problem Identification and Resolution.

The finding was more than minor because it affected the mitigating systems cornerstone objective by affecting the reliability of the reactor protection system. The finding was determined to be of very low safety significance (Green) because one inoperable channel would not prevent the reactor to scram on low condenser vacuum. Corrective actions by the licensee included installing temporary vent valves on the 3C and 2A sensing lines, enhancing operations training materials, revising the operations's procedure, and performing internal and external condenser walkdowns during the next outage on Unit 2 and Unit 3.

Inspection Report# : [2004010\(pdf\)](#)

G

Significance: Jun 14, 2004

Identified By: NRC

Item Type: FIN Finding

Crew Performance on the Dynamic Scenario Portion of the 2004 Facility-Administered Annual Requalification Examination Operating Test

A finding of very low safety significance was identified. The finding was associated with unsatisfactory operating crew performance on the simulator during facility-administered licensed operator requalification examinations. Of the 12 crews evaluated, three did not pass their annual operating tests. The finding is of very low safety significance because the failures occurred during annual testing of the operators on the simulator, because there were no actual consequences to the failures, and because the crews were removed from watch-standing duties, retrained, and re-evaluated before they were authorized to return to control room watches.

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

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Significance: Jun 14, 2004

Identified By: NRC

Item Type: FIN Finding

Individual Operator Performance on the Job Performance Measure or Dynamic Scenario Portion of the 2004 Facility-Administered Annual Requalification Examination Operating Test

A finding of very low safety significance was identified. The finding was associated with unsatisfactory performance of individual operators on the annual licensed operator requalification operating test. Of the 62 licensed operators examined, unsatisfactory performance was identified for two operators during job performance measures (JPMs) and 14 operators in the dynamic scenario portion. The finding is of very low safety significance because the failures occurred during annual testing of the operators on the simulator and simulated performance of tasks in the plant, because there were no actual consequences to the failures, and because the individuals were removed from watch-standing duties, retrained, and re-evaluated before they were authorized to return to control room watches.

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

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Significance: May 14, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to incorporate procedure steps to prevent the inadvertent automatic closure of the alternate feeder breaker to Bus 33, upon restoration of offsite power

A self-revealed finding was identified for the failure to incorporate appropriate procedure steps to prevent the inadvertent automatic closure of the alternate feeder breaker to Bus 33, during the restoration of offsite power. This finding was a Non-Cited Violation of 10 CFR 50 Appendix B, Criterion V.

The inspection team determined that this finding was more than minor because the mitigating systems cornerstone objective was affected. Specifically, inadvertent tripping of an Emergency Diesel Generator output breaker could affect the potential availability of an Emergency Diesel Generator for mitigating the effects of a Loss of Offsite Power. The inspection team concluded that this finding was of very low safety

significance (Green), since the reverse power trip of the Emergency Diesel Generator output breaker did not adversely affect the functional capability of the 2/3 Emergency Diesel Generator during the actual Loss of Offsite Power event. As an immediate corrective action, the licensee revised the offsite power restoration procedure to correct the deficiency. (Section 40A3.4)

Inspection Report# : [2004009\(pdf\)](#)

G

Significance: Apr 04, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Instruction and Accomplish Those Instructions to Properly Align the Unit 3 Emergency Diesel Generator Pump and Discharge Piping of the Fuel Oil Pump in January 2004 Failure to Im

A self-revealed finding involving a Non-Cited Violation of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified due to the failure of maintenance workers to properly implement work instructions to reassemble the Unit 3 emergency diesel generator fuel oil pump and discharge piping in January 2004. This human performance deficiency resulted in cracks and leaks on the Unit 3 emergency diesel generator fuel oil pump discharge line and its subsequent failure of the 24 hour endurance test on two occasions in March 2004.

This finding was more than minor because it affected the mitigating systems cornerstone objectives and affected the availability and reliability of the Unit 3 emergency diesel generator which is a backup emergency power source. The finding was determined to be of very low safety significance (Green) because the Unit 3 emergency diesel generator passed the monthly operability test in January and February 2004, and ran approximately 25.5 hours in a degraded condition on March 3, 2004. Corrective actions by the licensee included the repair of the Unit 3 emergency diesel generator fuel oil pump piping, long term plans to modify the Unit 3 emergency diesel generator fuel oil pump piping, and the review of this event with mechanical maintenance personnel with emphasis on proper maintenance practices.

Inspection Report# : [2004002\(pdf\)](#)

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Significance: Apr 04, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Implement Adequate Corrective Action

A finding of very low safety significance was identified by the inspectors involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to implement adequate corrective action following the issuance of a previous Non-Cited Violation dated February 6, 2001, in that on May 28, 2002, the licensee again failed to correctly evaluate the test data from performance testing of the Unit 3 isolation condenser. Corrective actions by the licensee included conducting testing of the isolation condenser with a revised methodology and two revisions to the design analysis.

This finding was more than minor because if left uncorrected this issue could become a more significant safety concern. Specifically, the testing deficiencies could allow the acceptance of an isolation condenser that actually had degraded below its design requirements. The issue was of very low safety significance because based on additional testing with a revised methodology as well as the revised analysis, it was concluded that the isolation condenser was capable to perform its design function.

Inspection Report# : [2004002\(pdf\)](#)

Barrier Integrity

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Significance: Nov 05, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Electricians Removed the 3d Drywell Cooler Breaker While it Was Tagged Out-of-service in the Racked-to-test Position

On November 5, 2004, a performance deficiency was self-revealed when electrical maintenance personnel removed the 3 B drywell cooler breaker, that was tagged out-of-service in the racked to test position, to perform a preventive maintenance task. During the performance of Unit 3 Division 1 undervoltage testing, alarm E-4, "DW [drywell] Cooler Blower Trip," on panel 923-5, was received in the control room. A non-licensed operator was dispatched to the breaker cubicle and found the cubicle empty. Electrical maintenance personnel had removed the breaker to perform a preventive maintenance task that was scheduled to be performed after the completion of undervoltage testing. The primary cause of this violation was related to the cross-cutting area of Human Performance.

The finding was greater than minor because if left uncorrected the failure to adhere to clearance order tag requirements and the failure to be aware of plant equipment status prior to re-alignment or removal could become a more significant safety concern. The inspectors completed a Phase 1 significance determination of this issue using IMC 0609, "Significance Determination Process," Appendix G, Check List 7, dated May 25, 2004. The three areas listed in the checklist that would require a Phase 2 or 3 analysis were not applicable to this finding, therefore, the inspectors concluded that the finding was of very low safety significance. The electricians were temporarily removed from duties and counseled, and all electrical maintenance department personnel were briefed on this event. This issue was a Non-Cited Violation of Technical Specification 5.4.1 which required the implementation of written procedures for the control of locking and tagging of plant equipment. (Section

1R20.1.(1))

Inspection Report# : [2004013\(pdf\)](#)**G****Significance:** Oct 08, 2004

Identified By: NRC

Item Type: FIN Finding

The Licensee Did Not Control Tools and Equipment Staged to Install a Temporary Modification to Keep the Control Room Emergency Ventilation System Dampers Open in the Event of an Accident

A finding of very low safety significance was identified on August 3, 2004, by the inspectors during the walkdown of a corrective action for a previous event. The licensee had an abnormal operating procedure requirement to have tools and equipment staged to install a temporary modification to keep the control room emergency ventilation system dampers open in the event of an accident. The equipment necessary to install the temporary modification was in various stages of disarray. Some equipment was not labeled and some necessary tools were missing. The licensee identified a number of corrective actions including properly packaging the necessary tools and equipment, revising procedures, and initiating a training request to ensure operations personnel are properly trained in the use of the tools and equipment.

The finding was more than minor because it affected the Barrier Integrity Cornerstone attributes of configuration control and the cornerstone objective of protecting persons in the control room from radionuclide releases caused by accidents or events. The issue was of very low safety significance due to it only impacting the radiological barrier function of the control room emergency ventilation system. This was not a violation of regulatory requirements.

Inspection Report# : [2004010\(pdf\)](#)**G****Significance:** Oct 08, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

The Licensee Did Not Move the Reactor 05000249/2004010-03 Building Ventilation System Into the Maintenance Rule (a)(1) Category

A finding of very low safety significance was identified by the inspectors involving a Non-Cited Violation of 10 CFR 50.65, "Maintenance Rule," requirements. The licensee failed to identify that the number of functional failures for the reactor building ventilation system had exceeded the established performance criteria and did not move the reactor building ventilation system into the a(1) category. Once identified, the reactor building ventilation system was moved into the a(1) category on October 8, 2004. The licensee had not yet determined system goals or established corrective actions by the close of the inspection period. The primary cause of the violation was related to the cross-cutting area of Problem Identification and Resolution in that functional failures of the system were not properly entered into the corrective action program.

This issue was more than minor because it involved the design control and barrier performance attributes of the barrier integrity cornerstone; 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 issue was of very low safety significance because the licensee was still able to maintain secondary containment.

Inspection Report# : [2004010\(pdf\)](#)**G****Significance:** Oct 08, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

The Licensee Failed to Correctly Restore the Control Room Emergency Ventilation System to Operable Status Following Maintenance

A self-revealed finding of very low safety significance involving a Non-Cited Violation of Technical Specification 3.7.4 was identified on April 28, 2004. The licensee failed to correctly restore the control room emergency ventilation system to operable status following maintenance. This left the control room emergency ventilation system inoperable for greater than its Technical Specification allowed outage time. This finding was self-revealed when the system did not operate properly several days later during a routine system realignment. As corrective action, the licensee revised a procedure to give better guidance on how to remove the temporary modification.

The issue was more than minor because it affected the Barrier Integrity Cornerstone attributes of design and configuration control and the cornerstone objective of protecting persons in the control room from radionuclide releases caused by accidents or events. The issue was of very low safety significance due to the short duration of the condition of the system.

Inspection Report# : [2004010\(pdf\)](#)**G****Significance:** Aug 18, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Adequately Perform an Operability Evaluation

A finding was identified by the inspectors involving the failure to adequately perform an operability evaluation. This failure was a Non Cited Violation of 10 CFR 50, Appendix B, Criterion III, "Design Control." On November 13, 2003, the licensee identified in Engineering Evaluation EC34593 that 8 inch diameter 150 lb flanges were installed on the main steam relief valve discharge lines on each unit since construction. The engineering evaluation stated that 300 lb flanges were required. Operability Evaluation 03-013, "Electromatic Relief Valve

(ERV) Discharge Piping Flanges," stated that the discharge flanges were operable and no further actions were required. The inspectors reviewed the operability evaluation on August 18, 2004. The inspectors identified that the licensee's evaluation demonstrated that the stresses on the flanges exceeded the Code allowable values, but the licensee's evaluation did not state this fact. The operability evaluation was closed with no specific action required to return the flanges to their design specifications. The primary cause of this violation was related to the cross-cutting area of Human Performance.

The finding was greater than minor because if left uncorrected the failure to perform adequate operability evaluations could become a more significant safety concern. If the inspectors had not intervened the licensee would not have taken action to bring the relief valve discharges flanges up to Code requirements. As corrective action, the licensee re-performed the evaluation and determined that the flanges were operable, but degraded. The licensee planned further evaluation to make a successful case for Code Committee approval or replace the flanges during the next refueling outage for both Units 2 and 3. To correct the problems with operability evaluations, the licensee had previously implemented a Technical Rigor program. This finding had very low safety significance because the flanges were determined to be operable. (Section 1R15) Inspection Report# : [2004013\(pdf\)](#)

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Significance: May 14, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate secondary containment leak rate test procedure which resulted in a NCV of Technical Specification 3.6.4.1 for an inoperable secondary containment when the drywell purge fans were operating

A self-revealed finding was identified involving an inadequate secondary containment leak rate test procedure which resulted in a Non-Cited Violation of Technical Specification 3.6.4.1 for an inoperable secondary containment when the drywell purge fans were operating. For example, secondary containment was inoperable on May 5, 2004, while Unit 3 was in Mode 1 and the Unit 2 drywell purge fans were operating.

The finding was more than minor because if left uncorrected it would become a more significant safety concern, and was associated with the Barrier Integrity cornerstone objective to provide reasonable assurance that containment protects the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance (Green) because the finding only represented a degradation of the radiological barrier function of secondary containment. As an immediate corrective action, licensee personnel revised the applicable alarm response procedures to secure the running drywell purge fans on either unit, if reactor building ventilation trips and isolates. In addition, a work request was initiated to repair the in-leakage to the drywell purge filter housings discovered by the licensee. (Section 4OA3.5) Inspection Report# : [2004009\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

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Significance: Jun 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Work crew was exposed to high radiation levels from the accumulation of contaminants in a vacuum cleaner used to clean debris in the Unit 2 condenser

A self-revealed finding of very low safety significance and an associated Non-Cited Violation (NCV) were identified because a work crew was exposed to high radiation levels from the accumulation of contaminants in a vacuum cleaner used to clean debris in the Unit 2 condenser false bottom.

The finding was more than minor because deficiencies with radiological work planning coupled with radiation protection technician work coverage were associated with the "Program and Process" and "Human Performance" attributes of the Occupational Radiation Safety Cornerstone. The finding affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. The finding was of very low safety significance because work crew radiation exposures were low relative to regulatory limits, there was not a substantial potential for a worker overexposure, and because the licensee's ability to assess worker dose was not compromised. To address this issue, the licensee developed guidance for the use of vacuums in highly contaminated areas, workers were counseled, and the work planning problems were captured in the outage lessons learned database.

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

Public Radiation Safety

Physical Protection

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

Miscellaneous

Last modified : June 17, 2005