# Cooper
# 1Q/2008 Plant Inspection Findings

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## Initiating Events

**Significance:** G Dec 31, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
**Inadequate Tagout Procedure Results in Inadvertent Stroke of Motor Operated Valve**
A self-revealing noncited violation of Technical Specification 5.4.1.a, “Written Procedures,” was identified involving an inadequate procedure for controlling work on energized circuits. Specifically, inadequate procedural guidance in Administrative Procedure 0.9, “Tagout,” allowed power to be restored to the control logic for residual heat removal injection valve RHR-MOV-27A while personnel were performing maintenance on the valve. This condition created a personnel hazard and resulted in the inadvertent opening of injection valve RHR-MOV-25A due to interlock logic with valve RHR-MOV-27A being satisfied. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2007-06844.

The finding is more than minor because it affects the equipment performance attribute of the initiating events cornerstone, and affects 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. Using the Manual Chapter 0609, Phase 1 screening worksheet, the issue screened as having very low safety significance because the performance deficiency did not result in a condition that could have resulted in exceeding the Technical Specification limit for any RCS leakage or could have likely affected other mitigating systems causing a total loss of safety function. The cause of this finding is related to the human performance cross cutting component of work control in that the licensee did not appropriately coordinate work activities by incorporating guidance to consider the impact of changes to the work scope on other maintenance that was in progress (H.3(b)).
Inspection Report# : 2007005 *(pdf)*

**Significance:** G Jun 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Entry Into the Stability Exclusion Region of the Power to Flow Map**
A self-revealing noncited violation of Technical Specification 5.4.1.a was identified involving an inadequate procedure for transitioning to single recirculation loop operation during power operations. This procedural inadequacy resulted in operators entering the stability exclusion region after securing one reactor recirculation pump for maintenance activities. This issue was entered into the licensee’s corrective action program as Condition Report CR-CNS-2007-03555.

The finding is more than minor because if left uncorrected the finding could become a more significant safety concern. For example, operation in the stability exclusion region could result in core thermal-hydraulic instabilities and rapid power oscillations. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheet, the finding is determined to have a very low safety significance because it did not contribute to the likelihood that mitigating systems would be unavailable following a reactor trip. The cause of this finding is related to the human performance cross cutting component of resources because the system operating procedures did not provide guidance for establishing adequate margin to the stability exclusion region prior to securing a reactor recirculation pump (H.2(c)).
Inspection Report# : 2007003 *(pdf)*

**Significance:** G Jun 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Inadequate Equipment Isolation Instructions Results in Unisolable Leak and Reactor Scram**

A self-revealing noncited violation of Technical Specification 5.4.1.a was identified for the inadequate isolation instructions contained in System Operating Procedure 2.2.8, “Control Rod Drive Hydraulic System.” The use of these inadequate isolation instructions resulted in an unisolable leak from the control rod drive system and insertion of a manul reactor scram. This issue was entered into the licensee’s corrective action program as Condition Report CR-CNS-2007-03552.

This finding is more than minor because it is associated with the initiating events cornerstone attribute of procedure adequacy and affects the associated cornerstone objective to limit the likelihood of those events that upset plant stability. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheet, the finding is determined to have a very low safety significance because it did not contribute to the likelihood that mitigating systems would be unavailable following a reactor trip. The cause of this finding is related to the human performance cross cutting component of resources because the licensee failed to ensure that the procedure was complete and accurate to assure proper component isolation from the reactor coolant system prior to performing maintenance activities (H.2(c)).
Inspection Report# : 2007003 *(pdf)*

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# Mitigating Systems

**Significance:** W Mar 18, 2008
Identified By: NRC
Item Type: VIO Violation
**Failure to ensure that some steps contained in emergency procedures would work as written**
White. A violation of 10 CFR Part 50, Appendix B, Criterion V, was identified for failure to ensure that some steps contained in emergency procedures at Cooper Nuclear Station would work as written. Inspectors identified that steps in Emergency Procedures 5.4POST-FIRE, "Post-Fire Operational Information," and 5.4FIRE-S/D. "Fire Induced Shoutdown From Outside Control Room," intended to reposition motor-operated valves locally, would not have worked as written because the steps were not appropriate for the configuration of the motor-starter circuits. This condition existed between 2004 and June, 2007. Appendix B to 10 CFR 50, Criterion V, was not met because these quality-related procedures would not work to allow operators to bring the plant to a safe shutdown condition in the event of certain fires. This finding had a cross-cutting aspect in Problem Identification and Resolution, under the Corrective Action attribute, because the licensee did not thoroughly evaluate the 2004 NRC violation to address causes and extent of condition (P.1.c - Evaluations).

This finding is of greater than minor safety significance because it impacted the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating event to prevent undersirable consequences. This finding affected both the procedure quality and protection against external factors (fires) attributes of this cornerstone objective. This finding was determined to have a White safety significance during a Phase 3 evaluation. The scenarios of concern involve larger fires in specific areas of the plant which trigger operators to implement fire response procedures to place the plant in a safe shutdown condition. Since some of those actions could not be completed using procedures as written, this would challenge the operators' ability to establish adequate core cooling.
Inspection Report# : 2008008 *(pdf)*

**Significance:** G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Inaccurate Assumptions in Control Room Flooding Calculation**
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” involving the failure to verify the adequacy of input assumptions to a design basis calculation. Specifically, a design basis control room flooding analysis assumed operators could terminate a turbine equipment cooling system pipe leak in the control room within 30 minutes when it is not possible to do so. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2007-07708.

The finding is more than minor because it affects the design control attribute of the mitigating systems cornerstone,

and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, Appendix M, “Significance Determination Process Using Qualitative Criteria,” a bounding quantitative analysis was performed resulting in the determination that the finding was of very low safety significance.

Inspection Report# : 2007005 *(pdf)*

**Significance:** G Dec 31, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
**Inadequate PMT Results in Inoperable Emergency Diesel Generator**
A self-revealing noncited violation of Technical Specification 5.4.1. a, “Written Procedures,” was identified because the licensee failed to establish an adequate postmaintenance test procedure to verify component performance following maintenance. Specifically, the licensee’s postmaintenance test instructions were inadequate to verify an essential shutoff function of the Diesel Generator 1 day tank float valve following replacement on August 28, 2007. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2007-07594.

The finding is more than minor because it affects the procedure quality attribute of the mitigating systems cornerstone, and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Though the failure of the float valve did impact operability of the diesel generator it would not have prevented the diesel generator, from starting and loading in response to an accident. Using the Manual Chapter 0609, Phase 1 Screening Worksheet, the issue screened as having very low safety significance because it did not represent a loss of safety system function. The cause of this finding is related to the human performance crosscutting component of resources in that the licensee’s postmaintenance test procedure was inadequate to verify the essential shutoff function of the float valve [H.2(c)].
Inspection Report# : 2007005 *(pdf)*

**Significance:** G Dec 31, 2007
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
**Procedure Noncompliance Causes Reactor Equipment Cooling System Leakage**
A self-revealing noncited violation of Technical Specification 5.4.1. a, “Written Procedures,” was identified for the failure of maintenance personnel to follow procedures. Specifically, maintenance personnel failed to follow site administrative procedures that require verification of component identification prior to starting work. This resulted in maintenance personnel inadvertently attempting to remove a relief valve associated with the reactor equipment cooling system instead of the fuel pool cooling system. This error was identified while maintenance personnel were removing the wrong relief valve and an unexpected leak occurred. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2007-07519.

The finding is more than minor because it affects the configuration control attribute of the mitigating systems cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, Phase 1 Screening Worksheet, the issue screened as having very low safety significance because the maintenance personnel immediately restored the system integrity on noting the system leakage so that this did not represent a loss of safety system function. The cause of this finding is related to the human performance crosscutting component of work practices because maintenance personnel failed to implement an expected human error prevention technique [H.4(a)] .
Inspection Report# : 2007005 *(pdf)*

**Significance:** G Nov 28, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to correct battery surveillance requirements**
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI for failure to correct a nonconservative technical specification. The licensee determined on March 14, 2007 that Technical Specification Surveillance Requirements 3.8.4.2 and 3.8.4.5 were nonconservative, but did not initiate any corrective action to address the degraded condition. The licensee determined that these surveillance requirements were nonconservative

with respect to safety related 125 Vdc battery intercell resistance measurements.

The failure to correct an inadequate technical specification surveillance requirement is a performance deficiency. This finding is more than minor because it is associated with the Mitigating Systems cornerstone attribute of procedure quality and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable circumstances (i.e., core damage). Using the Manual Chapter 0609, ASignificance Determination Process,@ Phase 1 Worksheet, the finding is determined to have a very low safety significance because it did not result in the loss of a mitigating system safety function. This finding has a cross-cutting aspect in the corrective action program component of the cross-cutting area of problem identification and resolution because the licensee did not take appropriate corrective action to address a condition adverse to quality (P.1(d)) (Section 4OA2).

Inspection Report# : 2007006 *(pdf)*

**Significance:** G Nov 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to consider vortexing and available net positive suction head impact on the emergency diesel fuel oil system**
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance for the failure to verify the adequacy of design for the emergency diesel generator fuel oil system. Specifically, the licensee did not complete the necessary vortexing and net positive suction head calculations on the emergency diesel generator fuel oil storage tank and associated transfer pumps, and the fuel oil day tanks and associated booster pumps. These calculations were required to establish that adequate design margins exist to demonstrate air entrainment or cavitation does not occur during the mission time for these pumps. This finding was entered into the corrective action program under Condition Reports CNS-2007-07421 (fuel oil storage tank) and CNS-2007-07585 (fuel oil day tank).

The finding is more than minor because it is associated with the Mitigating Systems cornerstone attribute of “Design Control.” It impacts the cornerstone objective to ensure the availability, reliability, and capability of the emergency diesel generator system to respond to initiating events and prevent undesirable consequences. Using Manual Chapter 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At- Power Situations," Phase 1 screening, this issue was determined to be of very low safety significance (Green) because it was determined that there was no loss of safety function. This finding has cross cutting aspects in the area of problem identification and resolution, with the Operating Experience attribute [P.2(b)]. The licensee failed to evaluate and apply various industry events associated with safety-related storage tanks vortexing into station design basis calculations.

Inspection Report# : 2007011 *(pdf)*

**Significance:** G Nov 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Installation of essential electrical cable with inadequate fault current ratings and not in accordance with original design basis requirements**
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance for a design change, associated with the emergency diesel generator, that failed to be subjected to control measures commensurate with those applied to the original design. Specifically, a design change installed an emergency diesel generator feeder cable that could fail prior to protective device actuation on postulated asymmetrical short-circuit current values. This issue was entered into the corrective action program under Condition Report CNS-2007-07409.

The finding is more than minor because it is associated with the Mitigating Systems cornerstone attribute of “Design Control.” It impacts the cornerstone objective to ensure the availability, reliability, and capability of the emergency diesel generator system to respond to initiating events and prevent undesirable consequences. Using Manual Chapter 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At- Power Situations," this issue screened as having very low safety significance (Green) during a Phase 1 review because the condition did not

represent a loss of system safety function.
Inspection Report# : 2007011 *(pdf)*

**Significance:** G Nov 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to ensure design basis information remains consistent within affected design documents**
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance, for the failure to correctly translate the emergency core cooling system design basis into instructions, procedures, and drawings. Specifically, the licensee failed to ensure design bases information was consistent within affected design documents. The licensee failed to identify that Calculation NEDC 91-078, "System Level Design Basis Review of High Pressure Coolant Injection (HPCI) System Program MOVs," and Design Calculation NEDC 98-001, "Vortex Limit for the Emergency Condensate Storage Tanks A & B," were documents that affected each other. This issue was documented in the licensee's corrective action program as Condition Report CNS-2007-07459.

The finding is more than minor because it is associated with the Mitigating Systems cornerstone attribute of "Design Control." It impacts the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At- Power Situations," this issue screened as having very low safety significance (Green) during a Phase 1 review because these deficiencies were determined not to result in loss of system safety function.

Inspection Report# : 2007011 *(pdf)*

**Significance:** G Nov 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to comply with design control program requirements**
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance for the failure to correctly translate the design basis into specifications, drawings, procedures, and instructions. Specifically, the design criteria documents were defined as being controlled documents that provided the criteria, requirements, and bases for safety-related/important-to-safety portions of Cooper Nuclear Station. Procedure 3.32 and the related series procedures specified certain types of information to be included in the design criteria documents (i.e., logic diagrams or system templates containing system safety objectives, functional and design criteria requirements, components and parameters essential to the ability of the system to achieve its required safety functions; four different configuration matrices used to validate that current plant configuration is consistent with the design basis criteria; and various appendices, including an acceptance criteria appendix for each component, sub-system and system). The team noted during review of the design criteria documents that much of this required information was not being maintained. These issues were documented in the licensee's corrective action program as Condition Reports CNS-2007-07461 and CNS 2007-07608.

This finding is more than minor because it is associated with the Mitigating Systems cornerstone attribute of "Design Control." It impacts the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding using Inspection Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening, and determined that the finding screened as very low safety significance (Green) because it was a design control deficiency confirmed not to have resulted in loss of safety function. A crosscutting aspect was identified involving the human performance component area for resources to ensure that design documentation is complete, accurate, and up-to-date (H.2(c)).
Inspection Report# : 2007011 *(pdf)*

**Significance:** G Nov 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Inadequate corrective actions associated with multiple workmanship issues on safety related valves**

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," having very low safety significance for the failure to adequately evaluate the extent of equipment failures resulting from workmanship issues, and to determine the causes and corrective actions for this significant condition adverse to quality to prevent recurrence. During Refueling Outage 23, multiple examples of workmanship issues were identified that resulted in safety related valve failures discovered during post-maintenance testing. Subsequent to the implementation of corrective actions to address this issue, a directly related workmanship condition was identified involving Safety-Related Valve HPCI-MOV-MO16. This valve was returned to service, for approximately 10 months, before identifying that a nonconforming condition involving workmanship existed that required correction prior to returning the valve to service. The licensee entered this condition into their corrective action program as Condition Report CNS-2007-07609.

This finding is more than minor because it is associated with the Mitigating Systems cornerstone attribute of "Equipment Performance." It impacts the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed to evaluate the extent of condition for the valves, which were potentially affected, and to determine the causes for the multiple workmanship issues. Using Manual Chapter 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," this issue screened as having very low safety significance during a Phase 1 review because the valve workmanship issues were corrected prior to returning to service with the exception of one valve, which was determined to be functional in the nonconforming condition. The cause of this finding had crosscutting aspects associated with problem identification and resolution, related to the Corrective Action Program attribute [P.1.(c)], for thoroughly evaluating problems. The resolutions address causes and extent of conditions, as necessary.
Inspection Report# : 2007011 *(pdf)*

**Significance:** G Nov 02, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to comply with the requirements of 10CFR50.71.e and to assure the updated safety analysis report has the latest information developed**
The team identified a noncited Severity Level IV violation for the failure to comply with the requirements of 10 CFR 50.71(e). The correct value for the automatic depressurization system accumulator minimum pressure was not used to revise the Updated Safety Analysis Report. Specifically, the licensee's technical specifications and Design Calculation NEDC 88-306 require a minimum of 88 psig to assure five actuations of the safety relief valves with the drywell at atmospheric conditions. The Updated Safety Analysis Report lists a minimum pressure of 68.6 psig for this function. The Updated Safety Analysis Report stated pressure of 68.6 psig was incorporated as part of the licensee's Updated Safety Analysis Report rebase line project and became effective on March 10, 2000. The licensee was unable to provide a basis for the lower pressure stated in the Updated Safety Analysis Report.

This violation was subject to traditional enforcement because it had the potential to impact the regulatory process. This finding is considered more than minor because use of this lower pressure value could render the automatic depressurization feature incapable of performing its design function. In accordance with NRC Enforcement Policy, the NRC has concluded that this is a Severity Level IV violation. Because this violation was of very low safety significance, was not repetitive or willful, and it was entered into the licensee's corrective action program as Condition Report CNS-2007-07468, this violation is being treated as an noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy.

Inspection Report# : 2007011 *(pdf)*

**Significance:** G Sep 22, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to Promptly Identify and Correct Flow Erosion in Service Water Piping**
The inspectors identified a noncited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," regarding the licensee's failure to promptly identify and correct a condition adverse to quality. Specifically, a degraded condition that was discovered in the service water supply piping to Diesel Generator 2 on August 16, 2007 was not evaluated for its effect on the operability of Diesel Generator 2 until prompted by inspectors on August 17, 2007. As a result , additional unavailability time was necessary to repair the degraded condition. This issue was

entered into the licensee's corrective action program as Condition Report CR-CNS-2007-05590.

The finding is more than minor because if left uncorrected, the flow erosion of the Diesel Generator 2 service water supply piping could have become a more significant safety concern. Using Inspection Manual Chapter 0609, Appendix A, “Determining the Significance of Reactor Inspection Findings for At-Power Situations,” the finding was determined to be of very low safety significance because it did not represent an actual loss of safety function of the diesel generator for greater than its technical specification allowed outage time. The cause of this finding is related to the problem identification and resolution cross cutting component of corrective action program in that the licensee did not correct the degraded condition of the Diesel Generator 2 service water piping in a timely manner (P.1(a)).
Inspection Report# : 2007004 *(pdf)*

**Significance:** G Sep 22, 2007
Identified By: NRC
Item Type: FIN Finding
**Failure to Follow Requirements of Industrial Safety Procedures**
The inspectors identified a Green finding regarding the licensee’s failure to follow the requirements of industrial safety procedures. Specifically, licensee personnel violated the requirements of Administrative Procedure 0.36, “Industrial Safety Procedure,” and Administrative Procedure 0.36.6, “Monitoring for Industrial Gases,” during a chemical injection treatment in the service water system. Specifically, the licensee failed to properly post the hazardous work permit, the individuals performing the work did not review the permit, and licensee personnel did not immediately evacuate the work area as required following a toxic gas release. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2007-06421.

The finding is more than minor because if left uncorrected it could become a more significant safety concern in that failure to follow industrial safety procedures during chlorine dioxide injections could put personnel at significant risk of injury and could have resulted in a larger toxic gas release in the intake structure, inhibiting the operators' ability to access safety related equipment to mitigate the consequences of an accident. Using Inspection Manual Chapter 0609, Appendix A, “Determining the Significance of Reactor Inspection Findings for At-Power Situations,” the finding was determined to be of very low safety significance because it did not result in a loss of safety function for any mitigating system. The cause of this finding is related to the human performance cross cutting component of work practices in that licensee personnel did not follow the requirements of industrial safety procedures as required (H.4(b)).
Inspection Report# : 2007004 *(pdf)*

**Significance:** G Jun 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Operator Error Leads to Draining RHR Loop**
A self-revealing noncited violation of Technical Specification 5.4.1.a was identified involving the failure to follow the procedural requirements of System Operating Procedure 2.2.69.3, “RHR Suppression Pool Cooling and Containment Spray.” This procedural violation resulted in the inadvertent draining and unavailability of one train of the low pressure coolant injection (LPCI) system. This issue was entered into the licensee’s corrective action program as Condition Report CR-CNS-2007-03380.

This finding is more than minor because it is associated with the mitigating systems cornerstone attribute of human performance and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheet, the finding is determined to have a very low safety significance because it did not result in the actual loss of safety function for the LPCI train for greater than its technical specifications allowed outage time. The cause of this finding is related to the human performance cross cutting component of work practices because neither self or peer checking actions prevented the reactor operator from violating the system operating procedure (H.4(a)).
Inspection Report# : 2007003 *(pdf)*

**Significance:** G Apr 24, 2007
Identified By: NRC
Item Type: NCV NonCited Violation

**Inadequate Procedures for Conducting Maintenance on Emergency Diesel Generator 2**
The team identified three examples of a noncited violation of Technical Specification 5.4.1.a involving the licensee's failure to establish adequate maintenance procedures for maintenance activities on Emergency Diesel Generator 2. Specifically, these procedures were incomplete in that they failed to provide adequate guidance to allow maintenance personnel to identify a degraded condition affecting the voltage regulator off-manual-auto switch and to properly conduct voltage regulator tuning activities.

The finding is more than minor because it is associated with the Mitigating Systems cornerstone attribute of procedure quality and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Specifically, the performance deficiency resulted in (1) the failure to discover a degraded condition in the Emergency Diesel Generator 2 voltage regulator and, (2) an over-voltage trip during the tuning of Emergency Diesel Generator 2 on November 13, 2006. Using the Manual Chapter 0609 Appendix G, "Shutdown Operations Significance Determination Process," Phase 1 Checklist, the finding is determined to have very low safety significance because one operable diesel generator was still capable of supplying power to the class 1E electrical power distribution subsystems. This finding has a cross-cutting aspect in the area of human performance in that the licensee's procedures were not complete and provided inadequate instructions for persons conducting maintenance on safety related equipment.
Inspection Report# : 2007007 *(pdf)*

**Significance:** W Apr 24, 2007
Identified By: NRC
Item Type: VIO Violation
**Failure to Promptly Identify and Correct Defective Diesel Generator Voltage Regulator Components**
The team identified an apparent violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to promptly identify and correct a significant condition adverse to quality, and failed to assure that the cause of a significant condition adverse to quality was determined and that corrective aciton was taken to preclude repetition. Specifically, the licensee's inadequate procedural guidance for evaluating the suitability of parts used in safety related applications presented an opportunity in which the licensee failed to promptly identify a defective voltage regulator circuit board used in Emergency Diesel Generator 2 prior to its installation on November 8, 2006. Following installation of the defective voltage regulator circuit board, the licensee failed to determine the cause of two high voltage condtions which occurred on November 13, 2006, and failed to take corrective action to preclude repetition. As a result, an additional high voltage condition occurred resulting in a failure of Emergency Diesel Generator 2 on January 18, 2007.

The finding is greater than minor because it is associated with the equipment performance cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The NRC assessed this finding through Phase 3 of NRC Inspection Manual Chapter 0609, "Significance Determination Process," and made a preliminary determination that the finding was of low to moderate safety significance. Based upon this analysis, discussions during a regulatory conference, and review of additional information, the staff determined that the final significance was of low to moderate safety significance (white). The final significance determination was communicated to the licensee on August 17, 2007. The cause of this finding is related to the problem identification and resolution cross cutting components of the corrective action program and operating experience because the licensee failed to thoroughly evaluate the high voltage condition such that resolutions address the causes and the licensee failed to effectively use operating experience, including vendor recommendations, resulting in changes to plant equipment (P.1(c) and P.2(b)).
Inspection Report# : 2007007 *(pdf)*
Inspection Report# : 2007008 *(pdf)*

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# Barrier Integrity

**Significance:** G Jun 23, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Control Rod Mispositioned During Reactor Startup**

A self-revealing noncited violation of Technical Specification 5.4.1.a was identified for the inadequate isolation instructions contained in System Operating Procedure 2.2.8, “Control Rod Drive Hydraulic System.” The use of these inadequate isolation instructions resulted in an unisolable leak from the control rod drive system and insertion of a manul reactor scram. This issue was entered into the licensee’s corrective action program as Condition Report CR-CNS-2007-03552.

This finding is more than minor because it is associated with the initiating events cornerstone attribute of procedure adequacy and affects the associated cornerstone objective to limit the likelihood of those events that upset plant stability. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheet, the finding is determined to have a very low safety significance because it did not contribute to the likelihood that mitigating systems would be unavailable following a reactor trip. The cause of this finding is related to the human performance cross cutting component of work practices because neither self or peer checking actions prevented the reactor operator from violating the prescribed rod withdrawal sequence (H.4(a)).
Inspection Report# : 2007003 *(pdf)*

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# Emergency Preparedness

**Significance:** G Sep 22, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Inadequate Procedural Guidance to Implement the Emergency Plan**
The inspectors identified a noncited violation of 10 CFR 50.47 (b)(4) regarding the licensee’s failure to establish adequate procedural guidance to implement the emergency plan. Specifically, Emergency Plan Implementing Procedure 5.7.1, “Emergency Classification”, Revision 35, contained inadequate procedural guidance in that it did not identify any specific entry criteria for Emergency Action Level 5.1.2. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2007-05135.

The finding is more than minor because it is associated with the Emergency Preparedness cornerstone attribute of procedural quality and affects the associated cornerstone objective to ensure 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. Using Inspection Manual Chapter 0609, Appendix B, “Emergency Preparedness Significance Determination Process,” the finding was determined to be of very low safety significance since the EAL classification process that was in place prior to August 30, 2007 could have resulted in a failure to declare a Notification of Unusual Event when it should have been declared. The cause of this finding is related to the human performance cross cutting component of resources in that complete and accurate procedures were not adequately maintained to support the emergency plan (H.2(c)).
Inspection Report# : 2007004 *(pdf)*

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# Occupational Radiation Safety

**Significance:** G Jun 23, 2007
Identified By: NRC
Item Type: FIN Finding
**ALARA Finding with three examples**
The inspector reviewed a self-revealing ALARA finding with three examples. The collective dose of three work activities exceeded five person-rem and the planned doses by more than 50 percent. Valve work accrued 34.829 person-rem and exceeded the dose estimate by approximately 86 percent. Refueling floor work accrued 22.271 person-rem and exceeded the dose estimate by approximately 56 percent. Drywell support work accrued 31.638 person-rem and exceeded the dose estimate by 55 percent. The primary reasons were the use of an inexperienced contract work force which used poor ALARA practices and extensive rework caused by human performance errors. The licensee was in the process of developing screening and supplemental training programs for selected contract maintenance workers.

This finding is greater than minor because it is associated with the occupational radiation safety program attribute of exposure control and affected the cornerstone objective, in that it caused increased collective radiation dose. Using the Occupational Radiation Safety significance determination process, the inspector determined this finding had very low safety significance. Although the finding involved ALARA planning and work controls, the licensee's latest, official three-year rolling average collective dose was less than 240 person-rem. Additionally, this finding had a crossing-cutting aspect in the human performance area associated with resources, in that procedures and other resources were not available and adequate to train personnel before allowing them in radiological working conditions (H.2(c)).
Inspection Report# : 2007003 *(pdf)*

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# Public Radiation Safety

**Significance:** G Sep 22, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to Survey Radioactive Elllluents**
The inspector identified a noncited violation of 10 CFR 20.1302(a) because the licensee's surveys of effluents containing radioactive particulates originating in the multi-purpose facility were not adequate to ensure compliance with the dose limits for individual members of the public required by 10 CFR 20.1301. The surveys were not adequate because the configuration of the radioactive effluent monitoring system in the multi-purpose facility was changed in 2007, and the sampling lines in the new configuration were not analyzed for line loss. The licensee documented the situation in the corrective action program and declared the multi-purpose facility effluent monitoring system inoperable. Further corrective action is being evaluated.

The finding is greater than minor because it is associated with the Public Radiation Safety Cornerstone attribute of equipment and instrumentation and affects the cornerstone objective in that the failure to perform adequate surveys of radioactive effluents could result in increased public dose. When processed through the Public Radiation Safety Significance Determination Process, the finding was determined to be of very low safety significance because it: (1) was not a radioactive material control finding, (2) was an effluent release program finding, (3) impaired the licensee's ability to assess dose, (4) it did not result in a failure to assess dose, (5) did not result in public doses that exceeded the values of 10 CFR Part 50, Appendix I, or 10 CFR 20.1301(d). In addition, this finding had cross-cutting aspects in the area of human performance and the component of resources because the licensee did not ensure complete, accurate, and up-to-date design documentation requests and specifications were supplied to outsourced engineering providers. (H.2.(c))
Inspection Report# : 2007004 *(pdf)*

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# Physical Protection

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

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# Miscellaneous

**Significance: N/A** Nov 28, 2007
Identified By: NRC
Item Type: FIN Finding
**Assessment of the licensee's problem identification and resolution program**
The team reviewed approximately 208 risk significant issues, apparent and root cause analyses, and other related documents, to assess the effectiveness of the licensee=s problem identification and resolution processes and systems.

The team concluded that the licensee=s management systems were effective, although several examples (historical and current) of failure to implement appropriate and timely corrective actions existed, especially early in the assessment period. But, overall, corrective actions were appropriate to the circumstances. The licensee implemented an effective program for evaluating operational experience. However, three examples existed where ineffective use of operating experience contributed to issues. The licensee overall performed effective and critical self assessments.

The team concluded that the licensee maintained an overall safety-conscious work environment. An increasing trend in anonymous condition reports written was being addressed by the licensee to ensure that issues affecting the safety conscious work environment did not exist. In addition, the team (as well as a licensee self-assessment) received isolated comments that it was easier to quickly repair items upon identification, rather than entering the items into the corrective action program. Plant personnel interviewed generally considered the employee concerns program a viable option to pursue safety issues. However, the team received isolated comments that individuals lacked confidence in the ability of the employee concerns program to resolve issues.

Inspection Report# : 2007006 *(pdf)*

Last modified : July 31, 2008