

Cooper

4Q/2008 Plant Inspection Findings

Initiating Events

Significance:  Sep 21, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Operator Error Results in Uncontrolled Reactivity Addition

A self-revealing Green NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified regarding the licensee's failure to follow the requirements of Administrative Procedure 0-CNS-61, "CNS Reactivity Management Program." Specifically, control room operators failed to maintain positive control over reactivity during a plant startup, resulting in an inadvertent increase in reactor power. The licensee entered this issue into their corrective action program as Condition Report CR-CNS-2008-06149.

The finding is more than minor because it could be reasonably viewed as a precursor to a more significant event. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding is determined to have very low safety significance because the resulting transient did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The cause of this finding is related to the human performance cross cutting component of Work Practices because licensee personnel failed to perform an adequate prejob brief and the operators failed to utilize appropriate self or peer checking prior to opening the reactor feed pump discharge valve at low power [H.4(a)]

Inspection Report# : [2008004](#) (*pdf*)

Significance:  Jun 21, 2008

Identified By: NRC

Item Type: FIN Finding

Failure to Follow Work Control Program Procedures

A self-revealing Green finding was identified associated with the licensee's failure to follow Administrative Procedure 0.40, "Work Control Program," requirements that would have ensured the 4160 V bus breaker fuse maintenance would not trip reactor recirculation pump "B". Implementation of inadequate maintenance instructions resulted in an unexpected trip of the reactor recirculation pump B and an unplanned reduction in reactor power. Specifically, the licensee failed to perform a thorough review of the electrical drawings required to fully understand the consequences of pulling fuses for maintenance in the 4160 V breaker cubicle. The licensee entered this issue into their corrective action program as CR-CNS-2008-4400.

This finding was more than minor since it affected the Reactor Safety Initiating Events cornerstone attribute of procedure quality and resulted in a plant transient. It was considered to be of very low safety significance since it did not contribute to both the likelihood of a plant trip and the likelihood that mitigation equipment or functions will not be available. The cause of this finding is related to the human performance crosscutting component of work practices because personnel did not effectively use self-checking techniques while determining the plant impact of the proposed NN fuse removal (H.4(a)).

Inspection Report# : [2008003](#) (*pdf*)

Mitigating Systems

Significance:  Dec 31, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Misaligned Lubricating Oil Piping Causes Diesel Generator 2 Failure

A Green self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the licensee's failure to establish measures to assure that long standing diesel generator 2 lube oil discharge piping misalignments leading to diesel generator oil leakage were promptly identified and corrected. Previous apparent cause investigations performed in 2002 and 2004 failed to correct the improper piping alignment that subsequently resulted in a fatigue failure crack of the diesel generator 2 main lube oil discharge piping February 13, 2008, requiring diesel generator 2 to be secured due to lubricating oil leakage during a surveillance test. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2008 00968. The licensee has corrected the misalignment issues.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective of ensuring the availability, and reliability of systems required to respond to initiating events. Using Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to have very low safety significance (Green) because it was not a qualification deficiency, did not represent a loss of safety function, did not represent an actual loss of a single train for greater than its technical specification allowed outage time, did not represent a loss of a non-technical specification train of equipment for greater than 24 hours, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The cause of the finding is related to the human performance crosscutting component of resources in that the licensee failed to provide complete, accurate and up-to-date procedures and work packages to ensure proper alignment of the diesel generator flexible hose replacements up to the February 13, 2008, lube oil leak [H.2(c)] (Section 1R12).

Inspection Report# : [2008005](#) (*pdf*)

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Assess and Manage the Risk of Heavy Equipment Operations

The inspectors identified a Green noncited violation of 10 CFR 50.65.a(4) for the licensee's failure to assess and manage the risk of planned maintenance activities. Specifically, the licensee failed to include planned heavy equipment operations in the vicinity of the startup transformer transmission lines in their risk assessment on November 26, 2008. The licensee entered this issue into their corrective action program as Condition Report CR CNS 2008 08987.

This finding is more than minor because licensee's risk assessment failed to consider maintenance activities that could increase the likelihood of initiating events. The inspectors determined that Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," could not be used due to the licensee's inability to quantify the increase in risk associated with the heavy equipment activity. The inspectors utilized Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," to determine that the finding was of very low safety significance because the other qualified source of offsite power (the emergency transformer) was unaffected by this performance deficiency and provided sufficient remaining defense in depth in the event of a loss of offsite power. The cause of this finding is related to the human performance crosscutting component of resources because procedures for control of switchyard and transformer yard activities failed to include precautions for heavy equipment operations in the immediate vicinity of the transmission lines in the protected area [H.2(c)] (Section 1R13).

Inspection Report# : [2008005](#) (*pdf*)

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Procedure Results in Inadequate Operability Determinations

The inspectors identified four examples of a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," regarding the licensee's failure to follow the requirements of Procedure ENN OP 104, "Operability Determinations." Specifically, the inspectors identified four examples in which the shift manager failed to document an adequate basis for operability when a degraded or nonconforming condition had been identified. The licensee entered this issue into their corrective action program as Condition Report CR CNS 2008 09514.

The finding is more than minor because the condition of performing inadequate operability determinations could become more significant if left uncorrected. Using Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the finding is determined to have very low safety significance because it did not result in the loss of safety function of any technical specification required equipment. The cause of this finding is related to the problem identification and resolution crosscutting component of the corrective action program because licensee personnel failed to thoroughly evaluate conditions adverse to quality and perform meaningful operability determinations [P.1(c)] (Section 1R15).

Inspection Report# : [2008005](#) (*pdf*)

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Procedure for Initiating Condition Reports

The inspectors identified three examples of a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," regarding the licensee's failure to follow the requirements of Administrative Procedure 0.5, "Conduct of the Condition Report Process." Specifically, licensee personnel failed to initiate condition reports for adverse conditions including multiple emergency response procedures that could not be implemented as written, a metallic noise emanating from a service water pump motor, and multiple examples of chemical storage procedure violations. The licensee entered this issue into their corrective action program as Condition Report CR CNS 2008 08780.

The finding is more than minor because the behavior of not initiating condition reports for adverse conditions could become more significant if left uncorrected. Using Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the finding is determined to have very low safety significance because it did not result in the loss of safety function of any Technical Specification required equipment. The cause of this finding is related to the problem identification and resolution crosscutting component of the corrective action program because licensee personnel failed to implement a corrective action program with a low threshold for identifying issues [P.1(a)] (Section 4OA2).

Inspection Report# : [2008005](#) (*pdf*)

Significance:  Dec 31, 2008

Identified By: NRC

Item Type: FIN Finding

Improper Storage of Hazardous Chemicals

The inspectors identified a finding regarding the licensee's failure to comply with the requirements of the Material Safety Data Sheets for two hazardous chemicals stored in the protected area. Specifically, licensee personnel stored a 55 gallon barrel of hydrogen peroxide in the same location as a 140 pound barrel of muriatic acid. The licensee entered this issue into their corrective action program as Condition Report CR CNS 2008 08823.

The finding is more than minor because if left uncorrected, it could become a more significant safety concern in that improperly stored hazardous chemicals could put personnel at significant risk of injury and could have inhibited 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 crosscutting

component of work practices because licensee personnel failed to supervise the activities of contractors storing hazardous chemicals in the turbine building [H.4(c)] (Section 4OA5).

Inspection Report# : [2008005](#) (*pdf*)

Significance:  Sep 21, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Assess Potential Adverse Effects on Internal Flooding Analysis

The inspectors identified two examples of a Green NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," regarding the licensee's failure to comply with the requirements of Engineering Procedure 3.3 SAFE, "Safety Assessment." Specifically, licensee personnel failed to identify the potential adverse impact to the station internal flooding analysis of the installation of a temporary air conditioning unit and a crane test load in the reactor building. The licensee entered this issue into their corrective action program as Condition Report CR-CNS-2008-07534.

The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Using the Manual Chapter 0609 Phase 1 screening worksheet, the inspectors determined that the finding has very low safety significance because it did not result in the loss of any system safety function. The cause of this finding is related to the human performance cross cutting component of decision making because licensee personnel failed to use conservative assumptions in the decision to make configuration changes on the reactor building floor [H.1(b)]

Inspection Report# : [2008004](#) (*pdf*)

Significance: SL-IV Sep 21, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Report Safety Relief Valve Test Results Above Technical Specification Allowed Setpoint

The inspectors identified a Severity Level IV noncited violation of 10 CFR 50.73 (a)(1) regarding the licensee's failure to submit a licensee event report within 60 days after the discovery of an event. Specifically, the inspectors determined that the licensee had failed to report the discovery that one safety relief valve pilot valve had exceeded its Technical Specification allowable lift setpoint for a time greater than allowed by Technical Specifications. The licensee entered this issue into their corrective action program as Condition Report CR-CNS-2008-07535.

This finding was evaluated using the traditional enforcement process because the failure to accurately report events has the potential to impact the NRC's ability to perform its regulatory function. Consistent with the guidance in Section IV.A.3 and Supplement I, Paragraph D.4, of the NRC Enforcement Policy, this finding was determined to be a Severity Level IV noncited violation

Inspection Report# : [2008004](#) (*pdf*)

Significance:  Sep 21, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Restore Standby Gas System to Standby Lineup

A self-revealing Green NCV of TS 5.4.1.a was identified regarding the licensee's failure to follow the requirements of General Operating Procedure 2.1.22, "Recovering from a Group Isolation." Specifically, control room operators failed to restore Train B of the standby gas treatment (SGT) system to its standby lineup following a planned group isolation. This error rendered one train of the SGT system inoperable for approximately 12 hours. The licensee entered this issue into their corrective action program as Condition Report CR-CNS-2008-04956.

The finding is more than minor because it is associated with the configuration control attribute of the Mitigating Systems Cornerstone, and affected the cornerstone objective of ensuring the availability, reliability, and capability of

systems that respond to initiating events. Using the Manual Chapter 0609 Phase 1 Screening Worksheet, the inspectors determined that the finding has very low safety significance because it did not result in the loss of Train B of SGT for longer than its technical specification allowed outage time. The cause of this finding is related to the human performance cross cutting component of Work Practices because control room operators failed to utilize appropriate self checking techniques when implementing Procedure 2.1.22 [H.4(a)]

Inspection Report# : [2008004](#) (*pdf*)

Significance: SL-IV Jun 21, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Notify the NRC of the Inability to Meet ASME Code Requirements

The inspectors identified a noncited violation of 10 CFR 50.55a(g)(5)(iii) for the licensee's failure to notify the NRC of the inability to meet the requirements of the American Society of Mechanical Engineers Code for Class 1 and 2 welds performed during Refueling Outage 22 in February 2005. Specifically, on April 21, 2008, the inspectors identified that welds associated with design changes to the reactor feedwater and high pressure core injection systems performed during Refueling Outage 22 did not meet the 90 percent total area coverage, required by ASME Section XI, during the performance of the pre service inspection ultrasonic testing. The licensee failed to notify the NRC of the inability to meet the ASME Code requirements within 12 months from the end of the third 10 year Inservice Inspection interval as required by 10 CFR 50.55a(g)(5)(iv).

The failure to notify the NRC constituted a performance deficiency of 10CFR 50.55a(g)(5)(iii). In accordance with Manual Chapter 0612, Appendix B, Section 2, this finding has the potential to impact the NRC's ability to perform its regulatory function since the licensee did not notify the NRC within the designated time period, and as a result, impeded the NRC's ability to evaluate and decide on the potential ASME code relief in a timely manner. This finding is greater than minor because it is associated with the mitigating system cornerstone, in that the licensee failed to ensure the reliability of safety-related equipment due to the failure to meet ASME Code requirements for the Class 1 and 2 system pressure boundary welds since February 2005. In accordance with Supplement 1 of the Enforcement Policy, the violation was characterized as Severity Level IV because it involved a failure to meet regulatory requirements that have more than minor safety significance. This finding is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy, due to the NRC review and acceptance of the licensee's fourth cycle Risk Informed - Inservice Inspection program which no longer requires these welds to be periodically inspected in accordance with ASME Code, Section XI.

Inspection Report# : [2008003](#) (*pdf*)

Significance:  Jun 21, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Properly Manage Elevated Risk

The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(4) with three examples regarding the licensee's failure to manage the increase in risk that resulted from maintenance activities. Specifically, the licensee did not post protected equipment signs on risk sensitive equipment during periods of elevated risk as required by Administrative Procedure 0-PROTECT-EQP. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2008-03555.

The finding is more than minor because it is related to the licensee's failure to implement prescribed significant compensatory measures. The inspectors reviewed Manual Chapter 0612, Appendix E, example 7.g and determined that it was not applicable to this situation due to the fact that the licensee does not maintain a shutdown probabilistic risk analysis model, and as such an incremental core damage probability cannot be estimated for the plant conditions that existed at the time of the performance deficiency. For the same reason, the inspectors determined that Manual Chapter 0609 Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," could not be used to determine the risk significance the finding. Using the qualitative review process of Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," the inspectors determined that this issue was of very low safety significance because it did not result in any additional loss of defense in depth systems. The cause of this finding is related to the human performance cross cutting component of work practices because licensee personnel did not follow the requirements of Procedure 0-PROTECT-EQP (H.4(b)).

Inspection Report# : [2008003](#) (pdf)

Significance: **G** Jun 21, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Construct Drywell Shielding According to Design Documents

The inspectors identified a Green noncited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," regarding the licensee's failure to build a permanent drywell shielding system in accordance with the approved design documents. During a pre-startup inspection of the drywell, inspectors discovered numerous assembly errors and unevaluated piping interactions with safety-related piping in the as-left configuration. This issue was entered into the licensee's corrective action program as Condition Report CR-CNS-2008-05208.

The finding is more than minor because it was associated with the design control attribute of the mitigating systems cornerstone, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Using the Manual Chapter 0609 Appendix G, "Shutdown Operations Significance Determination Process," flowchart, the inspectors determined that the finding is of very low safety significance because it did not result in the loss of any mitigation capability identified in the Manual Chapter 0609 Appendix G, Attachment 1 worksheet and that no qualitative risk assessment is required. The cause of this finding is related to the human performance cross cutting component of work practices because licensee personnel provided inadequate management oversight of contractors erecting permanent scaffolding in the drywell (H.4(c)).

Inspection Report# : [2008003](#) (pdf)

Significance: **G** Mar 22, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Scaffold Inspection Procedures

The inspectors identified a Green noncited violation of Technical Specification 5.4.1.a regarding the licensee's failure to follow the requirements of Maintenance Procedure 7.0.7, "Scaffolding Construction and Control." Specifically, licensee personnel failed to inspect all existing scaffolds and failed to identify multiple scaffolding interactions with safety-related equipment during a required annual scaffold inspection on January 21, 2008. This issue was entered into the licensee's corrective action program as Condition Report CR CNS 2008-01576.

The finding is more than minor because if left uncorrected the failure to perform annual scaffold inspections could become a more significant safety concern. Specifically, annual inspections failed to inspect all existing scaffolds and failed to identify multiple scaffolding interactions with safety-related equipment. 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 loss of function of a Technical Specification required system for greater than its allowed outage time. The cause of this finding is related to the human performance crosscutting component of work practices because maintenance personnel did not follow the requirements of Maintenance Procedure 7.0.7 (H.4 (b))

Inspection Report# : [2008002](#) (pdf)

Significance: **W** Mar 22, 2008

Identified By: NRC

Item Type: VIO Violation

Failure to Establish Adequate Procedures for Maintenance of Emergency DG Electrical Connections

Two examples of a self-revealing apparent violation of Technical Specification 5.4.1.a were identified regarding the licensee's failure to establish procedural controls for maintenance of electrical connections on essential equipment. In the first example, the licensee failed to include amphenol connections within the scope of existing periodic electrical connection inspections to identify loosening connections. In the second example, the licensee failed to incorporate internal operating experience into work control procedures to ensure that diesel generator-mounted amphenol connections were solidly attached following maintenance. These failures to establish adequate procedural controls led to the trip of Diesel Generator 2 during testing on January 15, 2008. This issue was entered into the licensee's

corrective action program as Condition Report CR CNS 2008 00304.

The finding affected the mitigating systems cornerstone and is more than minor because it is associated with the cornerstone attribute of equipment 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. The Phase 1 worksheets in Inspection Manual Chapter 0609, "Significance Determination Process," were used to conclude that a Phase 2 analysis was required because the finding represents an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time (7 days). A Phase 2 risk analysis was conducted using the guidance of Manual Chapter 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." Entering the site-specific pre-solved table with an assumed exposure time of greater than 30 days yielded a result of red, or very high significance. A Phase 3 analysis conducted by a risk analyst preliminarily determined the finding to be of white, or low to moderate significance. The cause of the finding is related to the corrective action component of the crosscutting area of problem identification and resolution in that the licensee failed to take appropriate corrective actions for a 2007 NRC inspection finding which identified inadequate maintenance procedures for checking the tightness of diesel generator electrical connections (P.1(d))

Inspection Report# : [2008002](#) (*pdf*)

Inspection Report# : [2008009](#) (*pdf*)

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 Shutdown 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 undesirable 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*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance:  Dec 31, 2008

Identified By: Self-Revealing

Item Type: FIN Finding

Procedure Violation Causes Augmented Off-gas System Isolation

A self-revealing finding was identified regarding the licensee's failure to follow procedural requirements during system maintenance. Specifically, licensee personnel failed to heed a cautionary note in a maintenance procedure, resulting in an inadvertent isolation of the augmented off-gas system. The licensee entered this issue into their corrective action program as Condition Report CR CNS 2008 08405.

The finding is more than minor because it affected the plant equipment attribute of the public radiation safety cornerstone, and affected the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials release into the public domain as a result of routine civilian nuclear reactor operation, in that the release rate through the elevated release point increased over five hundred percent as a result of the system isolation. Using Inspection Manual Chapter 0609, Appendix D, "Public Radiation Safety Significance Determination Process," the finding was determined to be of very low safety significance because it did not represent a failure to implement an effluent program or result in public dose greater than 10 CFR 50 Appendix I criterion. The cause of this finding is related to the human performance crosscutting component of work practices because licensee personnel failed to stop in the face of uncertainty when unexpected labeling was discovered [H.4(a)] (Section 4OA5).

Inspection Report# : [2008005](#) (*pdf*)

Physical Protection

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

Miscellaneous

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