

Kewaunee 1Q/2005 Plant Inspection Findings

Initiating Events

Significance:  Feb 18, 2005

Identified By: NRC

Item Type: FIN Finding

Safety Buses Relay Sensitivity to External Electrical Disturbances

The team identified a finding of very low safety significance for a failure to provide adequate relay setpoint calibration tolerances on safety buses 1-5 and 1-6 loss of voltage relays. The existing relay setting calibration tolerances would have allowed the loss of voltage relays to actuate spuriously during certain offsite electrical system disturbances and un-necessarily separate the safety buses from the offsite power system and result in a plant transient. The licensee implemented corrective actions to revise the appropriate loss of voltage relay surveillance procedures.

The finding was more than minor because the failure to provide adequate relay setting tolerances could result in an unnecessary separation of the safety buses from the electrical grid and an ensuing plant transient. The finding was of very low safety significance because the issue would not preclude the safety buses from being re-energized by the emergency power sources. The finding was a not a violation of regulatory requirements.

Inspection Report# : [2005002\(pdf\)](#)

Significance:  Feb 18, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Operator Actions Following Station Blackout - Lack of Procedure Guidance

The team identified a Non-Cited Violation of 10 CFR 50.63, "Loss of All Alternating Current Power," for a failure to maintain procedural steps that minimized the likelihood and duration of a Station Blackout (SBO) event. The deleted procedural steps allowed for the cross-connection of the plant's two redundant safety buses should both the Reserve Auxiliary Transformer and the 1B Emergency Diesel Generator fail. These procedural steps, as originally employed, served to lessen the likelihood of the SBO occurring, and/or reduce the time of the SBO. The licensee implemented corrective actions to revise the appropriate operations procedure.

This finding was more than minor, because it was associated with the likelihood of an initiating event and the reliability of a safety bus that responds to an initiating event. The finding was of very low safety significance, because multiple sources of both onsite and offsite power remained available to supply the two safety buses.

Inspection Report# : [2005002\(pdf\)](#)

Significance:  Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Control Of Combustible Matrials

A finding of very low safety significance was identified by the inspectors for a violation of a fire protection License Condition. The inspectors identified multiple examples of combustible materials either stored or in use without specific authorization. Specifically, the licensee stored and used lubricating oil in an emergency diesel generator room beyond that authorized by the Fire Protection Program Analysis, the licensee stored unauthorized combustible materials above the shelves in the working materials storage area and on top of cabinets nearby, and the licensee stored compressed flammable gas cylinders in the auxiliary building without authorization. Once these issues were identified, the licensee removed the unauthorized materials. This finding was related to the cross-cutting area of problem identification and resolution in that the NRC had previously identified issues relating to control of transient combustible materials above and near the working materials storage area but adequate corrective actions were not put in place to prevent recurrence of this issue.

The finding was more than minor because the failure to adequately control combustible materials, if left uncorrected, could become a more safety significant concern. The finding was of very low safety significance because the issue was a low degradation of fire prevention and administrative controls. The finding was a Non-Cited Violation of License Condition 2.C(3) which required specific authorization for the storage and use of combustibles in safety-related areas.

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

Significance:  Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Action to Preclude Storage of Oxygen Cylinders Next to Flammable Gas Cylinders

A finding of very low safety significance was identified by the inspectors for a violation of a fire protection License Condition. The inspectors identified the storage of compressed oxygen cylinders near compressed flammable gas cylinders. Once this issue was identified, the licensee removed the stored compressed oxygen cylinders from the area.

The finding was more than minor because the inappropriate storage of compressed oxygen cylinders could result in greater severity of a fire affecting equipment important to safety. The finding was of very low safety significance because the issue was a low degradation of fire prevention and administrative controls. The finding was a Non-Cited Violation of License Condition 2.C(3) which required the bulk storage of compressed oxygen cylinders to be separated from compressed flammable gas cylinders and corrective action of conditions significantly adverse to quality to preclude recurrence.

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

Mitigating Systems

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Significance: Feb 18, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Lack of Allowance for Manual Actions in Establishing Setpoint to Transfer AFW Pump Suction Source

The team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to establish the condensate storage tank (CST) level setpoint to transfer the auxiliary feedwater (AFW) pump suction supply from the CST to service water. The team determined that the calculation setpoint did not include an allowance for the manual operator actions required by emergency operations procedures. The licensee revised the plant procedure to perform the operator actions earlier in the procedure.

This finding was more than minor because it affected the mitigating systems cornerstone objective of equipment reliability, in that failure to align the AFW pump suction to service water prior to the CSTs being depleted could have resulted in damage to the AFW pumps. The finding was determined to be of very low safety significance because it was a design deficiency that did not result in a loss of function.

Inspection Report# : [2005002\(pdf\)](#)

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Significance: Feb 18, 2005

Identified By: NRC

Item Type: FIN Finding

Lack of 4160 Vac Bus 1-5 Ovevrcurrent and Loss of Voltage Relay Coordination

The team identified a finding of very low safety significance for a failure to provide adequate electrical coordination of protective devices thereby ensuring that postulated electrical faults would be isolated upon detection. Specifically, the team identified that the lack of adequate electrical systems coordination between the undervoltage and overcurrent protection on 4160 Vac safety bus 1-5 would result in the loss of voltage relays actuating before the bus over-current relays. This design deficiency results in the failure to lock out safety bus 1- 5 upon postulated electrical faults and subjects the postulated faulted safety bus 1-5 to be re-energized via an alternate offsite source. This design introduced a challenge to the safety equipment availability and reliability. The licensee planned to develop changes to the affected relays.

The finding was more than minor because the failure to provide adequate electrical coordination of electrical devices provided an unnecessary challenge to safety-related equipment, and if left uncorrected, could become a more safety significant concern. The finding was of very low safety significance because it was a design deficiency that did not result in the loss of system function. The finding was a not a violation of regulatory requirements.

Inspection Report# : [2005002\(pdf\)](#)

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Significance: Feb 18, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Short Circuit Duty of Buses Exceeded - Impact on Safe Shutdown Analysis

The team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion II, "Quality Assurance Program," for a failure to identify potentially adverse conditions to the plant's fire protection safe shutdown analysis caused by known overduty conditions on non-safety related buses 1-1, 1-2, 1-3, and 1-4. While the overduty condition was known to have existed at least since 1992, the licensee never entered the issue into the plant's corrective action program, where a proper evaluation should have addressed 10 CFR Part 50, Appendix R, safe shutdown related effects. The licensee planned to continue efforts to identify additional evaluations and corrective actions.

This finding was more than minor, because it was associated with the degradation of a fire protection feature. The finding was of very low safety significance because after extensive evaluation of the deficiency, the licensee was able to determine that the plant could still safely shut down the plant during a postulated fire event.

Inspection Report# : [2005002\(pdf\)](#)

G**Significance:** Feb 18, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Battery Sizing Deficiencies

The team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to implement adequate design controls of documents, inputs, and assumptions in the design of the two safety-related batteries. Specifically, the licensee did not perform and control battery sizing calculations, including consideration of temperature effects, to ensure that the batteries maintained sufficient capacity to perform the intended design function. The team determined that the failure to appropriately evaluate effects of battery room and cell temperatures also affected the cross-cutting area of Problem Identification and Resolution because the subject of battery capacity versus battery temperature had been previously identified in a 1992 NRC inspection. The licensee planned to perform battery sizing calculations as part of an overall electrical systems analysis improvement project.

This finding was more than minor because it affected the mitigating systems cornerstone objective of ensuring the availability and reliability of the 125 Volts direct current battery system to respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance because the battery remained operable. The licensee planned to develop formal battery sizing calculations.

Inspection Report# : [2005002\(pdf\)](#)**Significance: SL-IV** Feb 18, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Evaluation of Procedure Changes to Address AFW Design Deficiencies

The team identified a finding involving a Non-Cited Violation of 10 CFR 50.59, "Changes, Tests, and Experiments." The finding involved a failure to perform an adequate review of operations procedure changes in accordance with 10 CFR 50.59 associated with the operation of motor-operated valves for the auxiliary feedwater suction source from the service water system. The team determined that the licensee's approval of changes to Procedure E-0-05, with the introduction of adverse effects, and a determination that 10 CFR 50.59 was not applicable was a violation of 10 CFR 50.59. The licensee subsequently performed additional evaluations of the procedure changes.

Because the issue affected the NRC's ability to perform its regulatory function, this finding was evaluated with the traditional enforcement process. The finding was determined to be of very low safety significance since the design basis safety-related function of the AFW system, to remove reactor decay heat following a loss of normal feedwater, was not adversely affected. This was determined to be a Severity Level IV NCV of 10 CFR 50.59.

Inspection Report# : [2005002\(pdf\)](#)**G****Significance:** Feb 18, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Ensure that Calculation Assumption was Based on Valid Times for Manual Operator Actions

The team identified a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The finding involved the condensate storage tank (CST) level setpoint to transfer the auxiliary feedwater (AFW) pump suction from the CSTs to service water. A calculation assumption stated that a flow would drain from the CSTs to the condenser for 10 minutes until the operators isolated the flow by closing manual valve MU-2A. The team determined that the actions could not be completed in the time assumed by the calculation. The licensee initiated corrective actions to revise the appropriate operations procedure and calculation.

This finding was greater than minor because it affected the mitigating system cornerstone objective of equipment reliability, in that failure to align the AFW pump suction to service water prior to the CSTs being depleted could have resulted in damage to the AFW pumps. The finding was determined to be of very low safety significance because it was a design deficiency that was not found to result in a loss of function. The team concluded that it was unlikely that the operators would allow the CST level to reach the EOP setpoint without attempting to refill the tanks from other sources, and that the operators would be aware of the CST levels.

Inspection Report# : [2005002\(pdf\)](#)**G****Significance:** Feb 18, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

TSC DG Target Reliability Methodology Inadequate

The team identified a Non-Cited Violation of 10 CFR 50.63, "Loss of All Alternating Current Power." The finding involved the failure to establish a target reliability for the plant's alternate power source consistent with the reliability approved by the NRC staff in the licensee's Station Blackout submittal for 10 CFR 50.63. The non-conservative target reliability employed by the licensee resulted in the failure of the licensee to increase efforts to restore the Technical Support Center (TSC) Diesel Generator (DG) to its approved target reliability at an earlier date. The licensee subsequently initiated a corrective action to change the TSC DG reliability methodology.

This finding was more than minor, because it affected the reliability of a support system required for the mitigation of an Station Blackout event. The finding was of very low safety significance, because the finding did not directly affect the immediate operability of the TSC DG.

Inspection Report# : [2005002\(pdf\)](#)

G**Significance:** Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Scaffolding Erected too Close to Safety-Related Equipment Required to be Operable

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." The finding was associated with the licensee's failure to adequately implement scaffold control requirements contained in Procedure GMP-127, "Requirements and Guidelines for Scaffold Construction and Inspection," which required that scaffolding be no closer than 2 inches from any safety-related equipment unless otherwise evaluated and approved by Engineering. Specifically, scaffolding was erected within 2 inches of safety-related piping for the Service Water outlet from the jacket water heat exchangers for Diesel Generator B, the piping for the Emergency Borate MOV (CVC-440), and Safety Injection Pump A, without engineering evaluation and approval. Upon discovery of this condition, the licensee took immediate action to bring all noted scaffolding problems into compliance with licensee procedures and initiated a CAP document for the issue.

The finding was more than minor because, if left uncorrected, the issue may have resulted in a more significant safety concern. Specifically, the failure of scaffolding having adequate spacing in the vicinity of safety-related equipment during a seismic event could result in damage to mitigating equipment. The finding was of very low safety significance because it did not result in the actual loss of the safety function of the train or system. The finding was a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." Inspection Report# : [2004009\(pdf\)](#)

G**Significance:** Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify Inadequate Pre-Fire Strategies

A finding of very low safety significance was identified by the inspectors for a violation of a fire protection License Condition. The inspectors identified that the licensee failed to identify pertinent information, such as the presence of compressed flammable gas cylinders, on a fire area strategy for fire brigade personnel. Once this issue was identified, the licensee revised the fire area strategy for the affected area.

The finding was more than minor because the failure to provide adequate warnings and guidance relating to hazards associated with compressed flammable gas cylinders in fire strategies could adversely impact fire fighting strategies used by the fire brigade in fighting a fire. The finding was of very low safety significance due to extensive training provided to fire brigade members to deal with unexpected contingencies. The finding was a Non-Cited Violation of License Condition 2.C(3) which required that fire area strategies provide pertinent information to help the fire brigade to be better prepared for fire fighting within that area. Inspection Report# : [2004009\(pdf\)](#)

G**Significance:** Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Non-conforming Condition on the Safety-Related Containment Sump

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions." The original licensing and design basis of the containment sump screens was to prevent any particles greater than 1/8 inch from entering the sump. The inspectors determined that the screen size was 1/8-inch by 15/32-inch which allowed particles greater than 1/8-inch to enter the sump. The inspectors subsequently determined that this issue had been identified and entered into the licensee's corrective action program in 1997. However, adequate corrective actions were not taken to correct this condition adverse to quality. Once this issue was identified, the licensee conducted an operability determination and concluded that there were no immediate operability issues with the containment sump. The licensee determined that the sump screens were nonconforming in accordance with Generic Letter 91-18, and planned long term corrective actions to be developed in conjunction with the resolution of Generic Safety Issue 191 and NRC Generic Letter 2004-02. The inspectors concluded that the primary cause of this finding was related to the performance characteristic of corrective actions in the cross-cutting area of problem identification and resolution.

This finding was more than minor because the issue affected the Mitigating System cornerstone attribute of design control for initial design and equipment performance reliability and affected the associated cornerstone objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because it was not a design or qualification deficiency that has been confirmed to result in a loss of function per Generic Letter 91-18. This finding was a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions." Inspection Report# : [2004009\(pdf\)](#)

G**Significance:** Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Instructions and Procedures for Inspections and Cleaning of the Safety-Related Containment Sump

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, And Drawings," regarding licensee instructions and procedures for containment sump inspections. Specifically, the inspectors

identified that current licensee procedures did not require inspection or cleaning when boric acid or small debris may be present in the containment sump. The licensee's procedures for containment coatings did not require inspection of the coating located inside the containment sump which had not been inspected since initial application; and the licensee's procedure for containment sump gap inspections did not specify acceptance criteria to ensure this activity was satisfactorily accomplished. The licensee subsequently initiated several corrective actions to address these issues which included, but are not limited to: immediate inspection and cleaning of the safety-related containment sump; immediate inspection and assessment of the safety-related sump concrete coating; revision of preventive maintenance activities to require inspection and cleaning of the safety-related containment sump every refueling outage; revision of procedures to include inspection of the safety-related containment sump concrete coating every refueling outage; and revision of procedures to include appropriate acceptance criteria for determining that important activities were satisfactorily accomplished.

This finding was more than minor because if left uncorrected the finding could become a more significant safety concern and the issue affected the Mitigating System cornerstone attributes of equipment performance reliability and procedure quality and affected the associated cornerstone objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because it was not a design or qualification deficiency that has been confirmed to result in a loss of function per Generic Letter 91-18. This finding was a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings."

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

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Significance: Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." Failure to Promptly Correct Conditions Adverse to Quality, Specifically Associated with Degraded and Nonconforming Conditions

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions." During a review of the licensee's list of safety-related equipment designated as degraded or nonconforming, the inspectors identified that the licensee failed to promptly correct three conditions adverse to quality. These conditions adverse to quality included noncompliance of both Residual Heat Removal pump seal coolers with system design requirements, which was previously identified by NRC inspectors in November 2002, but not promptly corrected by the licensee; and two sections of safety-related piping, one associated with the "B" Emergency Diesel Generator fuel oil supply and the other associated with the Component Cooling Water piping from the "B" Residual Heat Removal pump seal cooler and stuffing box, that were identified by the licensee in September and April 2003, respectively, as exceeding Updated Safety Analysis Report stress criteria but not promptly corrected by the licensee. The primary cause of this finding was related to the cross-cutting area of problem identification and resolution. The licensee failed to prioritize and promptly correct these conditions adverse to quality in accordance with the guidelines in the corrective action program. Once these conditions were identified, the licensee restored the following conditions to operable: the 'A' RHR Pump Seal Cooler; the CCW piping expansion loop from the 'B' RHR pump seal cooler; and the fuel oil supply piping to the 'B' EDG. The licensee planned to restore the 'B' RHR Pump Seal Cooler during the upcoming Fall 2004 Refueling Outage.

This issue was more than minor because it affected the Mitigating System cornerstone attribute of design control for initial design and plant modifications and affected the associated cornerstone objective to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because it was not a design or qualification deficiency that has been confirmed to result in a loss of function per Generic Letter 91-18. This issue was a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions."

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

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Significance: Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." Failure to Have Procedures Appropriate to the Circumstances for Preventive Maintenance of the TDAFW Pump Turbine

A finding of very low safety significance was self-revealed during the licensee's review of high oil particulate in the Turbine Driven Auxiliary Feedwater Pump Turbine, which resulted in a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." The licensee determined that high oil particulate in the Turbine Driven Auxiliary Feedwater Pump Turbine was caused by damage to the journal bearing. Maintenance procedures did not specify appropriate acceptance criteria for oil sampling, did not specify an appropriate inspection frequency and criteria for the turbine bearings and bearing cavities, and allowed the reuse of bearings in different locations during maintenance of the Turbine, which were not acceptable maintenance practices. The reuse of the upper inboard bearing in a different location contributed to the journal bearing damage. The licensee took immediate remedial corrective actions to replace the bearings, clean the housing and return the pump to service. In addition, the licensee revised its maintenance procedures to include appropriate instructions for turbine and pump maintenance activities.

This self-revealed finding was more than minor because, if left uncorrected, the issue would have become a more significant safety concern. In addition, it affected the Mitigating Systems attributes of equipment performance reliability and the Mitigating Systems cornerstone objective of ensuring the reliability of systems. The finding was of very low safety significance because it was not a design or qualification deficiency that has been confirmed to result in a loss of function per Generic Letter 91-18. This issue was a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, And Drawings."

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

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Significance: Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." Failure to Have Acceptance Criteria for Flushing of the 1ARHR Fan Coil Unit

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, And Drawings." This finding was associated with the licensee's failure to implement an appropriate inspection and cleaning procedure containing quantitative or qualitative acceptance criteria for the 1A RHR pump pit Fan Coil Unit to ensure that cleaning was satisfactorily accomplished. Following discovery, the licensee entered the issue into its corrective action program and conducted an immediate operability assessment that determined the involved fan coil units were operable.

This issue was more than minor because it involved the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low safety significance because it was not a design or qualification deficiency that has been confirmed to result in a loss of function per Generic Letter 91-18. This issue was a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, And Drawings."

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

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Significance: Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, Criterion III, "Design Control." Failure to Verify the Acceptability of a Single Failure Vulnerability Introduced During a System Modification

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." This finding was associated with the licensee's failure to perform a design verification to demonstrate that the diesel generator lube oil cooler service water outlet valve actuators, installed under Design Change 3357, would not result in a failure of the valve stems under conditions in which the valve ball froze nor had the licensee provided sufficient justification to show that valve ball freezing was not credible. Following discovery, the licensee entered the issue into its corrective action program and performed an operability assessment which provided additional justification to demonstrate that the stem failure was considered not credible.

This issue was more than minor because it involved 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 to prevent undesirable consequences. The finding was of very low safety significance because it was not a design or qualification deficiency that has been confirmed to result in a loss of function per Generic Letter 91-18. This issue was a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control."

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

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Significance: Jul 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Repair the Deluge System Heat Detectors in a Timely Manner

The team identified a Non-Cited Violation of a license condition for fire protection. The licensee failed to take timely corrective actions to repair several maintenance storage area deluge system rate-of-rise heat detectors which were inoperable for an extended period of time. At the time of this inspection, the detectors had been repaired and returned to operability.

The finding was greater than minor because it affected the mitigating systems cornerstone attribute of protection against external factors (fire). Specially, a partially inoperable deluge system can increase the likelihood of a fire which could challenge safe shutdown. The finding was of very low safety significance because this fire area has Pyr-A-Larm ionization detectors located at the ceiling level. These detectors would alarm in the control room and the fire brigade would respond to a fire in this area. In addition, other defense-in-depth fire protection elements remained unaffected and fire in this area would not result in a loss of dedicated safe shutdown systems.

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

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Significance: Jul 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain Acceptable (Quality Related) Pre-Fire Strategies

A finding of very low safety significance was identified by the team for a violation of a license condition for fire protection. The licensee failed to include pertinent information in their fire strategies. Specifically, the licensee failed to include information about the potential unavailability

of certain fire hose stations and identify hydrogen and propane piping hazards in a fire zone. Once the issues were identified, the licensee entered the issue into their corrective action program and planned to revise their fire strategies to include the pertinent information.

The issue was greater than minor because the failure to include pertinent information relating to the water supply used for manual fire fighting and hazards associated with hydrogen and propane piping in fire strategies could adversely impact fire fighting strategies used by the fire brigade in fighting a fire. The issue was of very low safety significance because of the extensive training provided to fire brigade members to deal with unexpected contingencies. The issue was a Non-Cited Violation of License Condition 2.C(3) which required, in part, that fire area strategies provide the fire brigade pertinent information on a given plan area to help the brigade to be better prepared for fire fighting within that area.

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

Significance:  Jul 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Meet the Fire Protection Program Requirements for Hose Lengths to Maintain an Acceptable Water Pressure and Flow at Hose Stations

The team identified a Non-Cited Violation of License Condition 2.C(3), which requires the licensee to implement all provisions of their NRC approved fire protection program. The licensee failed to meet the fire protection program requirements for hose lengths to maintain an acceptable water pressure and flow to hose stations. The licensee's corrective actions included replacing hoses to increase water flow at hose stations

The finding was greater than minor because it affected the mitigating systems cornerstone attribute of protection against external factors (fire). Specifically, the failure to maintain acceptable water pressure and water flow to hose stations can hamper the brigade's ability to fight a fire, thereby, potentially endangering mitigating systems. The finding was of very low safety significance because the problem only impacts the effectiveness of the fire brigade while other fire protection features, such as fire barriers and physical separation remain available.

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

Significance:  Jul 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Meet the NFPA Code Requirements for Extinguisher Placement

The team identified a Non-Cited Violation of License Condition 2.C.(3), which requires the licensee to implement all provisions of their approved fire protection program. Amendment No. 23 to Facility Operating License Safety Evaluation Report dated December 12, 1978, required fire extinguishers in accordance with the National Fire Protection Association Code. The licensee failed to meet the Code requirements for extinguisher placement in Fire Area AX-32. Once identified, the licensee initiated corrective actions to meet the Code requirements.

The finding was greater than minor because it affected the mitigating systems cornerstone attribute of protection against external factors (fire). Specially, not having an extinguisher to put out a small fire can increase the likelihood of a fire which could challenge safe shutdown. The finding was of very low safety significance because this fire area has fire detectors that would alarm in the control room and the fire brigade would respond to a fire in this area. In addition, other defense-in-depth fire protection elements remained unaffected and fire in this area would not result in a loss of dedicated safe shutdown systems.

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

Significance:  Jul 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Transient Combustibles Not Adequately Controlled Within Fire Area AX-32

The team identified a Non-Cited Violation of License Condition 2.C(3) for failure to adequately control transient combustibles in fire area AX-32. Specifically, authorization for the storage and use of combustibles in safety-related areas was not obtained. Once uncontrolled transient combustibles were identified, the materials were either included in the transient combustible permit system or removed from the area.

The issue was greater than minor because the failure to adequately control combustible materials could result in a more significant safety issue. Uncontrolled combustibles could result in the greater likelihood or severity of a fire which affects equipment important to safety. The finding was of very low safety significance because of mitigation capability available in the event of a fire in fire area AX-32.

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

Significance:  Jul 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Transient Combustibles Not Adequately Controlled Within Fire Area AX-24

The team identified a Non-Cited Violation of License Condition 2.C(3), in that a hazardous quantity of transient combustibles was present in fire area AX-24. The hazardous quantity of transient combustibles present exceeded the quantity of combustibles allowed with no fire detection systems in this fire area.

The finding was greater than minor because it affected the mitigating systems cornerstone attribute of protection against external factors (fire). Specifically, the presence of transient combustibles beyond what was approved by the NRC could result in the increased likelihood of a fire which could challenge safe shutdown. The finding was of very low safety significance because a fire from the observed transient combustibles would not result in a loss of the alternate shutdown systems.

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

G

Significance: Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify and Correct Issues Associated with Historical Safety Injection Lube Oil Cooler Fouling; 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action"

A finding of very low safety significance associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was self-revealed on January 15, 2004, when licensee inspection of the 'A' and 'B' safety injection pump lube oil coolers identified silt and lake grass accumulation at the tube pass inlets. Significant fouling of the safety injection pump lube oil coolers with lake grass had been identified by the licensee as early as 1992 when the coolers were first opened and inspected. The licensee failed to enter the results of those inspections in the corrective action program when fouling was identified, until 2001. When the issue was entered into the corrective action program in 2001, following an inspection by plant personnel, the associated evaluation did not adequately address the issue and corrective actions were not taken in a timely manner to address the issue.

The licensee initiated numerous corrective actions to address the root and contributing causes identified during the root cause evaluation of this event. Some of those actions included: replacing the old safety injection pump lube oil coolers with coolers of a new design; performing an extent of condition review of other service water systems prior to plant restart in January 2004 to ensure no similar immediate issues existed; sharing lessons learned from this event with all plant staff; and performing a prioritization review of all outstanding plant design modifications.

The inspectors verified the licensee's past operability analysis for the safety injection pumps. The inspectors evaluated the finding using the results of that analysis and Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening, and determined that the finding was of very low safety significance.

Inspection Report# : [2004004\(pdf\)](#)

G

Significance: Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to have Procedures Appropriate to the Circumstances, Including Appropriate Acceptance Criteria for Implementation of the Generic Letter 89-13 Program with Respect to the Safety Injection Lube

A finding of very low safety significance associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when the licensee discovered fouling of the safety injection pump lube oil coolers in January 2004. The licensee determined that evidence of the fouling had been present since the first inspection of the coolers in 1992. The licensee performed that first inspection as part of its actions to comply with Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment." However, no acceptance criteria were included in the licensee's procedures developed to implement the commitments of Generic Letter 89-13 for these coolers to ensure that this activity had been satisfactorily accomplished.

The licensee initiated several corrective actions to address this issue, some of which included: establishing appropriate acceptance criteria for the safety injection lube oil coolers; developing a recovery plan for the licensee's Generic Letter 89-13 program and categorizing the program health in a red status; designating a single program owner to the Generic Letter 89-13 program; and reviewing other procedures utilized to implement the licensee's Generic Letter 89-13 program to verify specific acceptance criteria are contained in the procedures.

The inspectors verified the licensee's past operability analysis for the safety injection pumps. The inspectors evaluated the finding using the results of that analysis and Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening, and determined that the finding was of very low safety significance.

Inspection Report# : [2004004\(pdf\)](#)

G**Significance:** Mar 31, 2005

Identified By: NRC

Item Type: NCV NonCited Violation

Reactor Operation Above Licensed Power Limit

A finding of very low safety significance associated with a Non-Cited Violation of the plant operating license was self-revealed during normal plant operations. The Kewaunee Nuclear Power Plant Facility Operating License, as amended stated, "The Nuclear Management Company (NMC) is authorized to operate the facility at steady-state reactor core power levels not in excess of 1772 megawatts (thermal)." Contrary to this, on January 31, 2005, the 8-hour average thermal power peaked at 1772.07 MWt before being restored to below 1772 MWt. Reactor power was allowed to rise above 1772 MWt because the 8-hr average reactor thermal power indicator on the plant process computer system was not reliable, and the site operating philosophy allowed the 1-minute average and the 15-minute average reactor thermal power indications to exceed 1772 MWt. Once the 8-hour average was discovered to be in excess of that allowed in the Operating License, operators immediately lowered power to within the licensed limit and entered this issue into the corrective action program. This violation of the plant operating license was considered greater than minor, because it could affect the barrier integrity cornerstone objective of protecting the integrity of the fuel cladding and was associated with the barrier integrity cornerstone attributes of thermal limits and reactivity control. The finding also involved the crosscutting area of human performance. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix A, Phase 1, the finding was of very low safety significance.

Inspection Report# : [2005003\(pdf\)](#)**W****Significance:** Dec 31, 2004

Identified By: NRC

Item Type: VIO Violation

Inability to Close Containment Equipment Hatch

The inspectors identified an apparent violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, And Drawings," having potential safety significance greater than green. The finding was associated with the licensee's inability to close the containment equipment hatch in an expeditious manner while the plant was in the refueling shutdown mode, fuel was in the reactor vessel, the time to boil was estimated to be less than 30 minutes, and the reactor coolant system was open to the containment atmosphere. The inability to close the containment equipment hatch was caused by a design error in a large steel rail system installed inside the containment which was to be used to bring heavy equipment into the containment. This large steel rail system obstructed closure of the containment equipment hatch. The inability to close the hatch in an expeditious manner violated the licensee's procedure requirements to do so.

This finding was more than minor because it affected the Barrier Integrity Cornerstone objective and was associated with the Barrier Integrity Cornerstone attribute of containment boundary preservation. Since this finding was determined to be potentially greater than Green using the SDP Phase 2 Process, this finding is of a to-be-determined (TBD) safety significance pending review by the NRC Significance Determination Process/Enforcement Review Panel (SERP).

On May 5, 2005, a final significance determination letter was issued for a WHITE finding (IR 2005009).

Inspection Report# : [2004009\(pdf\)](#)Inspection Report# : [2005009\(pdf\)](#)**G****Significance:** Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Reactor Building Ventilation Isolation Function Not Available When Required

A finding of very low safety significance associated with Technical Specification 3.8 a.1.b., "Refueling Operations - Containment Closure," was self-revealed during required daily surveillance testing of reactor building ventilation system isolation. During the surveillance test, plant operators discovered that radiation monitors would not cause a Reactor Building Ventilation System Isolation to occur as designed. The cause of this failure was that other engineered safeguards testing was in progress that disabled the Reactor Building Ventilation System Isolation function, which was required to be operable at the time. Once this issue was identified, the licensee restored the Reactor Building Ventilation System and entered this issue into the corrective action program.

This finding was more than minor, because it represented a degradation of the Barrier Integrity Cornerstone objective and was associated with Barrier Integrity cornerstone attribute of safety system and component performance. The finding was of very low safety significance because it did not result in the actual release of radioactive material. This finding was a Non-Cited Violation of Plant Technical Specification 3.8.a.1.b., "Refueling Operations-Containment Closure."

Inspection Report# : [2004009\(pdf\)](#)**G****Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." Failure to Implement Procedures for Work on Safety-Related Equipment

A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR Part 50, Appendix B, Criterion V,

"Instructions, Procedures, And Drawings." The licensee conducted corrective maintenance to fix a deficient condition on the containment personnel hatch seal, a safety-related component, under the 'toolpouch maintenance' process rather than with the use of a work request or a work order, contrary to procedural requirements. The primary cause of this finding was related to the cross-cutting area of human performance. Licensee personnel failed to appropriately implement licensee procedures for conducting work on safety-related components. Once this was identified, the licensee performed an extent of condition evaluation on the work control process and identified that, since July 2002, approximately 14 percent of the work performed under 'toolpouch maintenance' had been performed on safety-related components without a work order. The licensee also implemented a number of corrective actions to ensure work on safety-related equipment is conducted according to procedural requirements.

This issue was more than minor because it affected the Barrier Integrity Cornerstone attribute of reactor containment integrity, and, if left uncorrected, the finding could become a more significant safety concern. The finding was of very low safety significance because it did not represent an actual open pathway in the physical integrity of the reactor containment and none of the work conducted on safety-related equipment without a work order resulted in an operability concern. This issue was a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, And Drawings."

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

G

Significance: Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to correct historical residual heat removal pump mechanical seal leakage; 10CFR Part 50, Appendix B, Criterion XVI, "Corrective Action"

A finding of very low safety significance associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions", was self-revealed on June 16, 2004, when licensee personnel discovered leakage from the 'B' residual heat removal (RHR) pump seal when the pump was stopped following the performance of a surveillance procedure on the 'B' RHR train. Plant personnel determined the leakage to be in excess of that specified in the plant's System Integrity Program for leakage from emergency core cooling systems outside containment. The leakage was also in excess of the amount of leakage assumed in the Updated Safety Analysis Report, Chapter 14, for calculation of control room habitability doses and offsite exposures. The inspectors subsequently determined, from interviews with licensee personnel and a review of the licensee's corrective action program and work order history, that excessive RHR seal leakage has occurred since the late 1980s. However, past corrective actions have not been effective to correct this condition adverse to quality.

The licensee performed a prompt engineering review to ensure that no immediate catastrophic failure mechanism for the RHR seal existed. The licensee also performed a prompt engineering review of the impact of the estimated leakage on the control room habitability doses, as well as the offsite doses, and determined no exposure limits would be exceeded. The licensee took actions to immediately stop the leakage and plans to replace the RHR pump seal during the next refueling outage.

This self-revealed finding was more than minor because the finding affected the cornerstone objective of Reactor Safety/Barrier Integrity. The inspectors evaluated the finding using Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening, and determined that the finding was of very low safety significance.

Inspection Report# : [2004004\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

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

Miscellaneous

Last modified : June 17, 2005