Kewaunee 2Q/2004 Plant Inspection Findings

Initiating Events

Mitigating Systems



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)



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)



Item Type: NCV NonCited Violation

FAILURE TO NOTIFY THE NRC OF A CHANGE IN OPERATOR STATUS IN ACCORDANCE WITH 10 CFR 50.74(c)

The inspector identified a violation of 10 CFR 50.74(c), "Notification of Change in Operator or Senior Operator Status." The inspector identified that

the facility licensee failed to notify the NRC within 30 days after receiving a change in medical status of a licensed operator from the station's medical examiner. The change in medical status required conditioning of the operator's license by the NRC. Inspection Report# : 2004002(pdf)



Significance: Mar 31, 2004 Identified By: NRC

Item Type: NCV NonCited Violation

Failure to have procedures appropriate to the circumstances, including appropriate acceptance criteria for determining important activities have been satisfactorily accomplished for inservice inspect

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, on December 10, 2003, licensee personnel discovered evidence of component cooling water (CCW) system leakage from a radiation detector housing integral to the CCW piping. The leakage was determined to be evidence of a through wall leak of an American Society of Mechanical Engineers (ASME) Section XI Class 3 pipe which rendered both trains of CCW inoperable. Therefore, on December 12, 2003, operators declared both trains of the CCW system inoperable, due to the small CCW leak on the CCW radiation detector housing. The licensee subsequently determined that evidence of the leakage had been present for the past 13 years. However, less than adequate procedure acceptance criteria resulted in licensee personnel classifying the leakage during inservice inspections as a 'non-recordable' indication instead of the required 'recordable' indication for this type leakage.

The licensee took immediate corrective actions to move the ASME Section XI Class 3 piping boundary to the radiation detector housing. In addition, the licensee implemented corrective actions to prevent recurrence which included: revision of 19 inservice inspection surveillance procedures to incorporate appropriate acceptance criteria; and discussions of the root cause with licensee inservice inspection personnel as a lessons-learned.

This self-revealed finding was greater than minor because, if left uncorrected, the finding would become a more significant safety concern. The inspectors evaluated the finding using the Significance Determination Process, Appendix A, Phase 1 Screening, and determined that the finding was of very low safety significance.

Inspection Report# : <u>2004002(pdf</u>)



Jan 28, 2004

Identified By: NRC Item Type: FIN Finding

Significance:

Failure to appropriately evaluate for potential bypqss flow on service water strainers

The inspectors identified a finding of very low safety significance associated with the licensee's failure to appropriately evaluate for potential bypass flow on the service water pump discharge strainers by measuring a critical gap dimension at the bottom of the basket-to-housing interface. This finding did not constitute a violation of NRC requirements because the strainers (aside from the pressure boundary) did not fulfill a safety-related function.

The inspectors determined that the finding was of more than minor significance because it would become a more significant safety concern if left uncorrected. Specifically, the failure to appropriately evaluate for potential bypass flow on the service water pump discharge strainers could reasonably result in debris fouling of service water cooled components and degraded or inoperable safety-related equipment. The inspectors concluded that this finding was a licensee performance deficiency of very low safety significance because it did not result in loss of safety function for a service water system train for greater than its Technical Specification allowed outage time. To address this issue, the licensee opened each strainer and measured the gap at the bottom of the basket-to-housing interface. Inspection Report# : 2004003(pdf)

Significance: SL-IV Dec 31, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

Non-cited violation of 10 CFR 50.59, for the failure to perform a written evaluation, as required, for a modification to the component cooling water system

The inspectors identified a finding of very low safety significance associated with a Non-Cited Violation of 10 CFR 50.59(d)(1) for the licensee's failure to perform a safety evaluation for changes made to the facility. Specifically, the licensee 'screened out' of the 10 CFR 50.59 process a modification that included the addition of a minimum flow recirculation line to the component cooling water pumps. This modification further cross-connected the suction and discharge piping of both component cooling water pump trains. Subsequently, the inspectors identified and the licensee concurred that a safety evaluation was required for this modification.

Because the Significance Determination Process is not designed to assess the significance of violations that potentially impact or impeded the regulatory process, this issue was dispositioned using the traditional enforcement process in accordance with Section IV of the NRC Enforcement Policy. However, the results of this violation were assessed using the Significance Determination Process. In this case, the licensee failed to perform a safety evaluation in accordance with 10 CFR 50.59 and had placed the new system in service for testing prior to the completion of the required safety evaluation.

The inspectors considered this issue to be of more than minor significance because, if left uncorrected, the issue could become a more significant safety concern. Specifically, the inspectors noted that the licensee's processes for permanent modifications failed to identify this issue at several review levels. The inspectors determined that the issue was of very low significance because the new system was placed in service for a short period of time for testing prior to the completion of the required safety evaluation. In addition, the final safety evaluation completed by the licensee in October 2003 determined that the modification did not require prior NRC approval. The inspectors determined this finding was a Severity Level IV Non-Cited Violation of 10 CFR 50.59. The inspectors also determined that the finding had, as a primary cause, a human performance deficiency which affected the cross-cutting are of Human Performance.

Inspection Report# : 2003008(pdf)



Significance: Dec 31, 2003 Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, Criterion III, "Design Control," the failure to provide for the checking the adequacy of design for temporary mod which changed the CCW system pressure boundary

The inspectors identified a finding of very low safety significance associated with a Non-Cited Violation of 10 CFR Part 50 Appendix B, Criterion III, "Design Control," for the licensee's failure to provide for checking of the adequacy of the design in Temporary Change TCR 03-036, in that, the design review failed to confirm the structural integrity of the new pressure boundary established for the studding outlet. Consequently, the licensee performed non-destructive examinations and additional flaw and engineering analyses to confirm the adequacy of the new design.

The inspectors considered this issue of more than minor significance, because if left uncorrected, the issue could become a more significant safety concern. In addition, the inspectors concluded that the finding was greater than minor because the finding involved the design control attribute of the mitigating systems cornerstone and affected the mitigating systems objective of ensuring the capability of the component cooling water system in response to initiating events to prevent undesirable consequences. Specifically, the temporary design change relied on unsupported assumptions that could have impacted the structural integrity of the component cooling water suction line. The inspectors evaluated the finding using the Significance Determination Process Phase 1 screening and determined that the finding was a design or qualification deficiency confirmed not to result in loss of function per Generic Letter 91-18; therefore, the finding was determined to be of very low safety significance. Inspection Report# : 2003008(pdf)



Significance: Dec 31, 2003 Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," No appropriate immediate corrective actions for reliability issues associated with incorrect cranking cutout relay installed in the EDGs

The inspectors identified a finding of very low safety significance associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the licensee's failure to take adequate corrective actions in response to the installation of non-conforming cranking cutout relays which prevented energizing of the diesel generator engine start relay. The licensee's corrective actions for this condition adverse to quality addressed routine surveillance procedures, but did not consider the licensee's Emergency Operating Procedures to ensure the Emergency Diesel Generator Shutdowns as directed by those procedures.

The inspectors considered this issue of more than minor significance, because if left uncorrected, the issue could become a more significant safety concern. In addition, the inspectors concluded that the finding was greater than minor because the finding involved the design control attribute of the mitigating systems cornerstone and affected the mitigating systems objective of ensuring the capability of the diesel generators in response to initiating events to prevent undesirable consequences. Specifically, in part, the licensee's corrective actions included revisions to normal operating procedures to verify continuity across the relay contacts following shutdown of the emergency diesel generators; however, the licensee did not similarly revise its Emergency Operating Procedures to verify continuity across the cranking cutout relay contacts following shutdown of the emergency diesel generators. The inspectors evaluated the finding using the Significance Determination Process Phase 1 screening and determined that the finding was a design or qualification deficiency confirmed not to result in loss of function per Generic Letter 91-18; therefore, the finding was determined to be of very low safety significance.

Inspection Report# : <u>2003008</u>(pdf)



Significance: Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, Criterion III, "Design Control," failure to install the appropriate cranking cutout relay in the EDG system in 1998; this resulted in failure of 'B' EDG to start in Feb., 2003

A finding of very low safety significance involving a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was selfrevealing when the "B" emergency diesel generator failed to start on February 26, 2003, during a daily Technical Specification-required test, in response to the "A" emergency diesel generator being out of service for regularly scheduled 18-month periodic maintenance. The generator failed to start due to a pair of electrically open contacts on a cranking cutout relay which prevented energizing of the engine start relay. The cranking cutout relay had been installed during a design change completed in 1998, and the performance ratings of the new relay did not match original design specifications.

The inspectors considered this issue of more than minor significance, because if left uncorrected, the issue could become a more significant safety concern. In addition, the inspectors concluded that the finding was greater than minor because the finding involved the design control attribute of the mitigating systems cornerstone and affected the mitigating systems objective of ensuring the capability of the diesel generators in response to initiating events to prevent undesirable consequences. Specifically, the temporary design change failed to consider inductive electrical loads across the relay contacts, for which the relays were not rated. The inspectors evaluated the finding using the Significance Determination Process Phase 1 screening and determined that the finding was a design or qualification deficiency confirmed not to result in loss of function per Generic Letter 91-18; therefore, the finding was determined to be of very low safety significance. Inspection Report# : 2003008(pdf)



Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR 50, Appendix B, Criterion XVI NCV for ineffective corrective actions taken to address the implementation of the Boric Acid Leakage Inspection and Tracking Program

The team identified a finding of very low significance associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to assure that actions were promptly taken to correct deficiencies in the implementation of the boric acid leakage inspection and tracking program for boric acid residue on safety-related components, a condition adverse to quality. Since 2001, approximately 12 condition reports had been initiated concerning the adequacy of the implementation of the licensee's boric acid leakage inspection and tracking program. During the inspection, the team identified approximately 14 safety-related components with various degrees of boric acid, which the licensee had not identified and evaluated in accordance with the boric acid leakage inspection and tracking program.

The team concluded that the licensee's failure to correct previous issues associated with the implementation of the boric acid leak log on safety-related components was greater than minor because if left uncorrected, the issue could become a more significant safety concern. The team evaluated the finding utilizing Inspection Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening and determined the finding was of very low significance. Inspection Report# : 2003010(pdf)



Significance: Oct 21, 2003 Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM TWO REQUIRED MEDICAL TESTS IN ACCORDANCE WITH 10 CFR 55.21 AND 55.23.

Green. The inspector identified a Non-Cited Violation of 10 CFR 55.21, "Medical Examination," and 10 CFR 55.23, "Certification." The inspector identified that the facility licensee failed to conduct all the medical testing required by American Nuclear Standards Institute/American Nuclear Society (ANSI/ANS) 3.4-1983, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants," as committed to by the facility licensee was not testing its operators for nose sensitivity (i.e., ability to detect odor of products of combustion and of tracer or market gases) Section 5.4.2, "Nose," and neurological testing, (i.e., normal central and peripheral nervous system function), including tactile discrimination (Stereognosis) sufficient to distinguish among various shapes of control knobs and hadles by touch, Section 5.4.14, "Neurological."

Inspection Report# : 2003005(pdf)

Significance: SL-IV Oct 21, 2003 Identified By: NRC Item Type: NCV NonCited Violation FAILURE TO PROVIDE ACCURATE INFORMATION TO THE NRC CONCERNING LICENSED OPERATOR MEDICAL REQUIREMENTS PER NRC FORM 396.

Severity Level IV. The inspector identified a Level IV Non-Cited Violation of 10 CFR 50.9, "Completeness and Accuracy of Information." The inspector identified that the facility licensee, between January 2, 2000, thorugh August 26, 2002, submitted to the NRC, NRC Forms 396 for 13 individuals applying for an initial operator's license and 18 licensed operators applying for renewal of their operator licenses, that were not accurate in all material respects. Specifically, the NRC Forms 396 certified that each applicant and licensed operator met the medical requirements of ANSI/ANS 3.4-1983. In fact, all the applicants and licensed operators were not adequately examined for all medical tests as required to meet the minimum standards of ANSI/ANS 3.4-1983.

Inspection Report# : <u>2003005(pdf</u>)



Significance: Oct 21, 2003 Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CONDUCT SIMULATOR PERFORMANCE TESTING THROUGHOUT THE LIFE OF THE SIMULATOR.

Green. The inspector identified a Non-Cited Violation of 10 CFR 55.46, "Simulation Facility." The inspector identified that the facility licensee failed to adequately conduct simulator performance testing throughout the life of the simulator. In addition, the facility licensee failed to correct modeling and hardware discrepancies and discrepancies identified from scenario validation and from performance testing. In addition, the facility licensee was committed to follow ANSI/ANS 3.5-1985, "Nuclear Power Plant Simulators for Use in Operator Training," as the way they would meet 10 CFR 55.46. Specifically, the licensee failed to conduct performance testing, with regard to normal evolutions core performance tests for Cycle 25, the most recent core load in the actual reactor. The licensee could only provide Cycle 7 normal evolutions core performance tests. No core performance tests had ever been conducted for Cycles 8 through 25, a period of 17 cycles.

Inspection Report# : 2003005(pdf)

Significance: SL-IV Oct 21, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROVIDE ACCURATE INFORMATION TO THE NRC CONCERNING ELIGIBILITY REQUIREMENTS FOR OPERATOR LICENSE APPLICATION PER NRC FORM 398.

Severity Level IV. The inspector identified a Level IV Non-Cited Violation of 10 CFR 50.9, "Completeness and Accuracy of Information." The inspector identified that on or about August 13, 2002, a senior facility licensee representative submitted to the NRC, NRC Forms 398 for three

individuals, each applying for an initial operator's license, that were not accurate in all material respects. The facility licensee provided inaccurate information by certifying on the NRC Form 398 that the initial operator license applications for three individuals had appropriately met the minimum training requirements for reactivity manipulations on the refrenced facility simulator in accordance with 10 CFR 55.31(a)(5) and 10 CFR 55.46(c)(2). Inspection Report# : 2003005(pdf)



Significance: Sep 30, 2003 Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Prescribe Instructions or Procedures Appropriate to the Circumstances for the Seismic Storage of Equipment Near the 'A' Auxiliary Feedwater Piping

The inspectors identified a Green finding associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the failure to prescribe instructions or procedures appropriate to the circumstances for the seismic control of equipment stored near the vicinity of the 'A' Auxiliary Feedwater (AFW) piping to the 'A' Steam Generator, an activity affecting quality. The inspectors identified during plant walkdowns that following the 2003 Refueling Outage, portable plant equipment, including two portable 2.5-ton cranes, were stored in close proximity to the AFW piping, without the use of seismic restraints.

Inspection Report# : 2003006(pdf)



Significance: Sep 30, 2003 Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Prescribe Instructions or Procedures Appropriate to the Circumstances for the Installation of the Refueling Cavity Drain Standpipe Following Refueling Activities

A Green finding associated with a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," was selfrevealed when the licensee, in preparing and verifying the response to NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors," dated June 9, 2003, determined that the containment refueling cavity standpipe had not been installed after the Spring 2003 Refueling Outage. A procedure revision, issued prior to the 2003 Outage, had removed prescribed instructions to install the refueling cavity drain standpipe following reactor vessel refueling activities. The inspectors also concluded that this finding had, as a primary cause, a human performance deficiency.

Inspection Report# : <u>2003006</u>(*pdf*)

Barrier Integrity



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

Significance: Dec 12, 2003

Identified By: NRC

Item Type: FIN Finding

Failure to take timely corrective actions to prevent recurrence for a 2001 white finding associated with Emergency Response Organization Augmentation

The team identified a Green finding for the failure to take timely corrective actions to prevent recurrence for a White Finding initially identified in September 2000, associated with Emergency Response Organization Augmentation. While the team determined that corrective actions to date have been effective, as evidenced by only one augmentation drill failure since 2001, three of the eight corrective actions had not been completed.

The team determined that this issue was more than minor because if left uncorrected, the issue could become a more significant safety concern. In addition, the team concluded that the issue affected the emergency preparedness cornerstone performance attribute associated with the emergency response organization augmentation system and emergency response augmentation testing and the objective of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The team evaluated the finding utilizing Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Section 5.0, "Corrective Actions," dated March 6, 2003, and determined the finding was of very low significance.

Inspection Report# : <u>2003010(pdf)</u>

Significance: Dec 12, 2003 Identified By: NRC

Item Type: NCV NonCited Violation

10 CFR50.54 and emergency plan NCV for ineffective corrective actions in 2002 which resulted in the failure to make timely notifications for an actual unusual event in February 2003

The team identified a finding of very low significance associated with a Non-Cited Violation of 10 CFR Part 50.54(q) and the licensee's Emergency Plan for the failure to notify the state and local governmental agencies within 15 minutes after the declaration of an actual Unusual Event on February 26, 2003. The team concluded this failure was caused by the licensee's ineffective corrective actions for previously identified weaknesses and problems in the area of Emergency Preparedness.

The team determined that this issue was more than minor because this was an actual event implementation problem and affected the emergency preparedness cornerstone objective of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The team evaluated the finding utilizing Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Emergency Preparedness Significance Determination Process Sheet 2, dated March 6, 2003, and determined the finding was of very low significance.

Inspection Report# : <u>2003010(pdf</u>)

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : September 08, 2004