

# Wolf Creek 1

## 1Q/2012 Plant Inspection Findings

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### Initiating Events

**Significance:**  Feb 12, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Inadequate Procedure Causes Lift of Relief Valve and Reactor Coolant Leak During Shutdown**

The inspectors reviewed a self-revealing non-cited violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for a procedure that failed to restore the reactor coolant pump seal return flow path prior to raising reactor coolant system pressure, which caused the seal return relief valve to lift. During shutdown, reactor coolant pump seal return valve BGHV8100 was shut. On February 12, 2012, Wolf Creek was in Mode 5 with a water-filled (solid) pressurizer at 94 psig. After pressurizer power operated relief valve maintenance, Wolf Creek raised reactor coolant system pressure to 250 psig. With no return path, the relief valve lifted at 150 psig for 15 hours before operators noted an unexplained steady increase in pressurizer relief tank level and re-established the return flow path. Wolf Creek procedures were written to transition straight to refueling, and did not include consideration for maneuvering the plant in Mode 5. This led to shutting valve BGHV8100 without instructions to reopen it before exceeding 150 psig. Wolf Creek subsequently added procedure steps and precautions to reopen the seal return path in Mode 5. The inspectors calculated that approximately 760 gallons of reactor coolant were lost to the relief tank. This issue was placed in the corrective action program as condition report 49021.

Failure to align the reactor coolant pump seal return flow path prior to raising reactor coolant system pressure above the relief valve setpoint, creating a leak path, was a performance deficiency. The inspectors determined that this finding impacted the Initiating Events Cornerstone and its objective to limit the likelihood of events that upset plant stability and challenge safety functions during shutdown. Specifically, it impacted the configuration control attribute of shutdown equipment lineup which created an unmonitored intersystem leak. The inspectors used Inspection Manual Chapter 0609, Appendix G, Attachment 1, checklist 4 (cold shutdown, level in the pressurizer, time to boil >2 hours) to evaluate the significance of this finding. A Phase 2 analysis was not needed because the level of inventory was terminated when the normal path was opened and the relief valve reseated. The leak would have terminated itself if the reactor coolant system drained itself to below the pump seal. The finding did not affect reactor coolant system level indication, affect the ability to terminate the leak path, affect the ability to add inventory, or affect the ability to recover residual heat removal if it was lost. Therefore, the finding was determined to be of very low safety significance. The inspectors identified the cause of the finding had a human performance cross-cutting aspect in the area of resources. Specifically, complete and accurate procedures were not provided because Procedure GEN 00-006 did not contain guidance to establish the seal return flow path prior to raising reactor coolant system pressure above 150 psig [H.2.c].

Inspection Report# : [2012002](#) (*pdf*)

**Significance:**  Dec 31, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure to Evaluate Gasket Compatibility**

The inspectors reviewed a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” associated with an improperly selected essential service water gasket that sprayed safety-related electrical equipment. On August 31, 2011, essential service water pump A was started and a 1 gpm leak from a bolted flange on the strainer was observed spraying a Class 1E supply transformer. The gasket was found to be broken due to excessive torque, and was replaced. Wolf Creek’s apparent cause evaluation concluded that the cause of the gasket failure was not evaluating the suitability of existing gasket material to be used in conjunction with the new, hard Ceramalloy coating applied to the strainers as part of a design change in 2003. The strainer joints had been previously re-tightened to stop leakage without evaluating the cause. Selecting inappropriate gasket material, which led to repeated leaks and tightening until the gasket broke, was a performance deficiency. The performance deficiency is more than minor

because it could be a precursor to a loss of essential service water event. Specifically, the water spray was wetting a transformer that could have caused the loss of the train A traveling screen, strainer, and ventilation. The inspectors used Inspection Manual Chapter 0609.04, and determined the issue was Green, or very low safety significance, because assuming worst case degradation, the finding did not affect train B. Also, train A essential service water was inoperable for less than its allowed outage time of 72 hours because it was successfully run the previous day. The finding had a cross-cutting aspect in the area of problem identification and resolution because Wolf Creek did not thoroughly evaluate the problem such that the resolutions address causes and extent of conditions, as necessary. Specifically the bolted flanges of the essential service water strainer A had leaked multiple times over the past 2 years, but did not get evaluated because they were classified as 'find and fix.' [P.1(c)] (Section 1R12).  
Inspection Report# : [2011005](#) (pdf)

**Significance:**  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Account for RCP Seal Injection in Safety Analysis for Inadvertent Safety Injection**

On June 13, 2011, the inspectors identified a non-cited violation of 10 CFR, Part 50, Appendix B, Criterion XVI, for an inadequate safety analysis of inadvertent operation of the emergency core cooling system. The inspectors identified that Updated Safety Analysis Report, Chapter 15.5.1, "Inadvertent Operation of the ECCS," was inadequate because it did not account for the effects of reactor coolant pump seal injection flow. Since the pressurizer would be nearly full when operators terminate safety injection flow, the added volume would eventually overflow the pressurizer. Relief of liquid by the pressurizer safety valves is not permissible by the Updated Safety Analysis Report and the Standard Review Plan because the event could then propagate to a loss of coolant accident. The inspectors also identified that Wolf Creek needed an additional time critical operator action to re-establish letdown to reduce pressurizer level. The inspectors identified that operators were not tested on these actions in the simulator. Wolf Creek evaluations in 2011 did not find the error in the safety analysis or operator training. Wolf Creek planned to re-perform this safety analysis and has changed its simulator training to include timing of safety injection termination and establishing letdown. This issue was entered in the corrective action program as condition report 40410.

Failure to identify an inadequate safety analysis for inadvertent safety injection while comparing the plant response during an actual inadvertent safety injection to the safety analysis was a performance deficiency. This finding was more than minor because it impacted the design control attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors used Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and determined that the issue required a Phase 3 analysis because it involved a primary system loss of coolant accident initiator that could exceed the technical specification limit for allowable leakage. The senior reactor analyst calculated a bounding incremental core damage probability of  $9.0E-7$  per year or very low safety significance. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with problem evaluation. Specifically, condition reports 34964 and 35700 did not identify the issue although they were tasked with evaluating the March 19 event against the safety analysis. [P.1(c)] (Section 1R18)

Inspection Report# : [2011005](#) (pdf)

**Significance:**  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Evaluation of Effects of Emergency Diesel Generator Frequency Variation on Supplied Equipment**

The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for the licensee's failure to adequately evaluate the effects of allowed technical specification frequency variations on plant equipment in design calculations. Specifically, significant effects on the Class 1E electrical equipment air conditioning units were observed which required licensee action. The reduced cooling capacity raised temperatures above the allowable limits for equipment in those rooms. This finding was entered into the licensee's corrective action program as condition report 2007-002734, for which the licensee performed a comprehensive analysis of the effects of frequency variation on safety-related equipment.

Failure to adequately analyze the effects of allowable frequency variations on equipment performance was a performance deficiency. This finding is more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and it affected the cornerstone objective of ensuring the availability, reliability,

and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with Inspection Manual Chapter 0609.04, this finding was determined to be of very low safety significance (Green) because it did not create a loss of safety system function of a single train for greater than the technical specification allowed outage times, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding did not have a cross-cutting aspect because the most significant contributing cause did not reflect current licensee performance (Section 40A2).

Inspection Report# : [2011005](#) (pdf)

**Significance:** **G** Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Maintain Steam Generator Level Above Lo Lo Level Setpoint**

The inspectors reviewed a noncited violation of Technical Specification 5.4.1.a, "Procedures," for failure of operators to follow procedure to maintain steam generator water level. This failure resulted in level in steam generator B level lowering such that a Lo Lo level actuation was initiated, which isolated normal feedwater and initiated auxiliary feedwater. A reactor trip signal was also

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received, but the control rods were already tripped. The licensee captured this issue in their corrective action program as Condition Report 39732 and subsequently changed its operating procedures and conducted remediation training of licensed operators.

The issue was considered more than minor because it impacted the human performance attribute of the Initiating Events Cornerstone and its objective to limit the events that upset plant stability and challenge safety systems during power and shutdown operations. Using Inspection Manual Chapter 0609.04, the inspectors determined the finding to be of very low safety significance (Green) because the finding did not contribute to both the likelihood of a reactor trip and the loss of mitigation equipment. The inspectors determined that the finding has a crosscutting aspect in the area of human performance associated with the decision making component because the decision by the crew to maintain steam generator level in a difficult to maintain band proved to have unintended consequences

Inspection Report# : [2011004](#) (pdf)

**Significance:** **G** Jul 21, 2011

Identified By: NRC

Item Type: FIN Finding

### **Switchyard component Failures Cause Loss of Ring Bus and Loss of Offsite Power**

On July 21, 2011, the inspectors identified a finding for degraded switchyard equipment that caused a loss of offsite power. Updated Safety Analysis Report (USAR), Section 8.2.1.3.g.1, states that: "Any transmission line can be cleared under normal or fault conditions without affecting any other transmission line." On August 19, 2009, the damaged carrier system signal failures that allowed a lightning strike to cause a loss of all three 345 kV lines was inconsistent with the Updated Safety Analysis Report. Wolf Creek's root cause and hardware failure analysis of the capacitive coupled voltage transformer found that it was degraded for a significant period of time. There was no causal analysis of the out of tune wave trap that contributed to the event. The inspectors concluded that the deficiency could have been prevented if Wolf Creek adopted significant external operating experience from 2004. This included inspection and/or replacement of aging capacitive coupled voltage transformers. Corrective actions from the 2004 operating experience were not implemented in a 2007 self assessment and were finally implemented in December 2009. This issue is captured in the corrective action program as Condition Report 19245. Wolf Creek and its owner companies have since upgraded all capacitive coupled voltage transformers (finishing in spring 2011), added fault data recorders, added enhanced line checking procedures with the grid operator, regrounded all three 345 kV lines, and plans to add an offsite power technical requirements manual limiting condition of operation per Condition Report 43244.

The failure to maintain 345 kV equipment such that a single line fault could be cleared without affecting the other lines, as described in the Updated Safety Analysis Report, is a performance deficiency. The issue is more than minor because it impacted the protection against external factors attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using Inspection Manual Chapter 0609.04, inspectors screened the finding to Phase 3 because it caused both a reactor trip and loss of mitigation equipment or functions to

not be available. The Senior Reactor Analyst calculated that the increase in core damage frequency was  $2.6 \times 10^{-7}$  or green. The inspectors determined that no crosscutting aspects applied because this finding is not indicative of current licensee performance.

Inspection Report# : [2011004](#) (pdf)

**Significance:** G Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **No Procedure for Debris in Transformer an Tank Yards Propr to Severe Weather**

The inspectors identified a noncited violation of Technical Specification 5.4.1.a, "Administrative Procedures," for having no procedure to address onsite debris impacting plant equipment during severe weather. The inspectors walked down external areas of the plant on June 1 and June 9, 2011, prior to the onset of predicted severe thunderstorms and tornadoes. The inspectors found loose debris each time and brought it to the attention of the licensee who secured the materials. The inspectors walked down the transformer yard and tank yard during a thunderstorm on June 16 and found loose debris such as plywood, trash, wood planks, and fiberglass planks. The inspectors brought this to the attention of Wolf Creek and the materials were removed or secured. Wolf Creek initiated several condition reports but they only addressed immediate cleanup. Wolf Creek procedures had no steps for securing potential wind-driven projectiles prior to severe weather. After June 16, Wolf Creek wrote Condition Report 40573 which started a weekly maintenance activity to remove loose materials and added procedure steps to have operations walk down external areas prior to severe weather.

This finding was more than minor because it impacted the protection against external factors attribute of the Initiating Events Cornerstone, and it affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors evaluated this finding using Inspection Manual Chapter 0609.04, and determined that it was of very low safety significance (Green) for June 16, 2011, because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment would be unavailable since the reactor was shutdown. Inspectors used Manual Chapter 0609 Appendix G, Checklist 4 for the other occurrences because Wolf Creek was in Modes 4 or 5. The finding again screened to Green because it did not increase the likelihood of a loss of inventory, did not cause the loss of reactor coolant system instrumentation, did not degrade the ability of the licensee to terminate a leak path or add inventory when needed, or degrade the ability to recover residual heat removal if it was lost. This finding has a cross-cutting aspect in the area of problem identification and resolution, specifically the corrective action program attribute because licensee's short-term corrective actions failed to ensure debris was secured or removed prior to severe weather [P.1 (d)](Section 1R01).

Inspection Report# : [2011003](#) (pdf)

**Significance:** G Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Undersized Weld Failure on Charging Header**

The inspectors documented a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes." Specifically, in October 2009, welders failed to ensure the fillet weld between the train B charging header and the half coupling used to attach two vent valves met the specified weld requirements. This weld failed in January 2011, rendering the train B charging system inoperable. The licensee's extent of condition review identified 12 vent line welds which did not meet ASME code weld size requirements and/or procedural requirements for 2:1 weld taper configuration. Additionally, quality assurance inspectors failed to identify that the 2:1 taper weld requirements specified by procedure, and ASME minimum weld size requirements, were not met in multiple vent line welds. The weld was repaired and built up to the correct 2:1 aspect ratio. This issue was entered into the licensee's corrective action program as Condition Reports 32648, 33686, 33689, and 36438.

The finding was more than minor because it was associated with the equipment performance attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors performed a Phase 1 screening in accordance with Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance (Green) because the issue did not result in exceeding the technical specification limit for identified reactor coolant system leakage or affect other mitigating

systems resulting in a total loss of their safety function. This finding had a cross-cutting aspect in the area of human performance, resources, because the licensee failed to ensure that personnel, specifically welders and quality assurance inspectors, were adequately trained in the procedural requirements and methods for measuring weld dimensions to assure nuclear safety [H.2(b)](Section 1R08).

Inspection Report# : [2011003](#) (pdf)

**Significance:**  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Ensure Separation of Stainless Steel and Carbon Steel Grinding and Cutting Tools**

The inspectors identified a noncited violation of 10 CFR Part 50 involving the failure of the licensee to ensure that weld preparation was protected from deleterious contamination in that drawers (located in the hot tool room) containing files, grinding wheels, flapper wheels, and cutting wheels, used for the purpose of weld preparation, contained a mixture of both stainless steel tools and carbon steel tools. The failure to separate tools used for stainless steel weld preparation from tools used for carbon steel preparation could result in the contamination of stainless steel welds by carbon steel and affect the material integrity and corrosion resistance. The licensee immediately removed the tools and replaced them with new tools stored separately for use on specific types of metal. This issue was entered into the licensee's corrective action program as Condition Report 36444.

The finding was more than minor because it was associated with the equipment performance attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations, and if left uncorrected the finding would become a more significant safety concern. The inspectors performed a Phase 1 screening in accordance with Inspection Manual Chapter 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance (Green) because the issue did not result in exceeding the technical specification limit for identified reactor coolant system leakage or affect other mitigating systems resulting in a total loss of their safety function. This finding had a cross-cutting aspect in the area of human performance, resources, because the licensee did not provide complete, accurate, and up-to-date procedures for the preparation of stainless steel and carbon steel welds [H.2(c)](Section 1R08).

Inspection Report# : [2011003](#) (pdf)

**Significance:**  Jun 16, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Ensure Configuration Control of Safety-Related Systems**

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," involving the failure of the licensee to review the suitability of installing brass fittings and leaving test fittings on pressure, differential pressure, and flow transmitter equalizing block valve drain ports instead of the design specified stainless steel manifold plugs. During a boric acid walkdown, the inspectors identified that drain ports on the equalizing block of two separate reactor coolant system flow transmitters had brass fittings installed instead of the design specified stainless steel fittings. In response to inspector concerns about the brass fittings, the licensee subsequently discovered that a design configuration nonconformance existed by leaving the test fittings on the drain port during plant operation. Licensee Drawing J-17D22 specifies that manifold plugs be installed in the drain ports during plant operation. The licensee immediately replaced the brass caps with stainless steel fittings. This issue was entered into the licensee's corrective action program as Condition Report 36439.

The finding was more than minor because it was associated with the design control attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The inspectors performed a Phase 1 screening in accordance with Inspection Manual 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance (Green) because the issue would not result in exceeding the technical specification limit for identified reactor coolant system leakage or affect other mitigating systems resulting in a total loss of their safety function. The inspectors also determined that the finding had a cross-cutting aspect in the area of human performance, resources, because the licensee did not provide adequate training of personnel so that the inappropriately installed fittings could be identified during system walkdowns.

Inspection Report# : [2011003](#) (pdf)

**Significance:**  Apr 05, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Inadequate Fire Watch Defeats Halon Fire Suppression in Vital Switchgear Rooms During Fire**

The inspectors reviewed a self-revealing noncited violation of License Condition 2.C.5 for failure to implement adequate fire watches which affected both trains of vital ac and dc switchgear. The inadequate fire watches occurred during an actual fire which negated the Halon system discharge because internal fire doors were not shut, as required, by the fire watch. The inspectors found problems with fire impairments and watches from 2008 that had not been corrected. Subsequent to the fire, Wolf Creek again briefed and trained its personnel on the requirements for fire watches. This issue is captured in the corrective action program as Condition Report 36719.

Failure to implement adequate fire impairments such that the fire watches ensured the success of the Halon system was a performance deficiency. The performance deficiency was more than minor because it impacted the Initiating Events Cornerstone and its objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the protection against external factors attribute was impacted by the fire impairment. To determine significance, the inspectors used Inspection Manual Chapter 0609.04 to screen the finding to Inspection Manual Chapter 0609, Appendix F, because the fire protection defense-in-depth strategies involving automatic suppression, fire barriers, and administrative controls were degraded. The senior reactor analyst conducted a Phase 3 review of this finding and concluded that the incremental core damage frequency was 1.6E-8 per year, or very low safety significance (Green). The inspectors found that the cause of the finding had a cross-cutting aspect in the area of problem identification and resolution. Specifically, corrective actions from ineffective fire watches in 2008 did not prevent recurrence of the inadequate fire watch on April 5, 2011 [P.1.d](Section 4OA3.3).

Inspection Report# : [2011003](#) (pdf)

**Significance:**  Dec 31, 2009

Identified By: NRC

Item Type: VIO Violation

**Failure to Correct Vessel Head Vent Path**

The inspectors identified a cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," due to an inadequate vent path for the reactor vessel head. The inadequate vent path resulted in the formation of voids in the reactor vessel head during Refueling Outage 17. Failure to ensure an adequate vent path in the reactor vessel head was the subject of a noncited violation in NRC Inspection Report 05000482/2008004. During and after Refueling Outage 16, Wolf Creek initiated a root cause evaluation and corrective actions to prevent occurrence. When one of the possible root causes was disproven in Refueling Outage 17, no additional action was taken to determine the cause of the vessel head vent blockage. However, the licensee could not exclude blockage in the piping. This issue was entered into the corrective action program and the licensee plans to conduct a more thorough inspection of the piping during the next refueling outage. This issue is being tracked by the licensee as Condition Report 22501.

The inspectors determined that the failure to provide adequate vessel head vent path to prevent gas accumulation in the reactor vessel during depressurized plant operations was a performance deficiency. The inspectors determined that this finding, which was associated with the Initiating Events Cornerstone, was more than minor because if left uncorrected, it would have become a more significant safety concern. Specifically, without an adequate vent path the reactor vessel does not have an effective means of relieving noncondensable gases to prevent a loss of reactor coolant system inventory. The inspectors evaluated this finding using Inspection Manual Chapter 0609, Appendix G, Attachment 1, and determined it be of very low safety significance based upon the demonstrated availability of mitigating systems and the flooded reactor cavity inventory. The inspectors determined the cause of the finding had a problem identification and resolution aspect in the corrective action program. Specifically, Wolf Creek's corrective actions were not successful to address the vent path blockage in a timely manner [P.1(d)].

Inspection Report# : [2009005](#) (pdf)

**Significance:**  Mar 31, 2009

Identified By: NRC

Item Type: VIO Violation

## Failure to correct component cooling water valve closures

The inspectors identified a cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," involving Wolf Creek's failure to correct the cause of the reactor coolant pump thermal barrier component cooling water heat exchanger outlet valves stroking closed on high flow. Specifically, between 2001 and 2009, Wolf Creek experienced repeated cases of the reactor coolant pump thermal barrier component cooling water heat exchanger outlet valves stroking closed during component cooling water pump swaps and during isolations of the radioactive waste evaporators. Wolf Creek reinitiated evaluation of the issue after the inspector's questions but did not review the impact on the operators' ability to open the valves given the valves' circuit breakers opening. Repeated throttle valve adjustments have not been successful in stopping the valve closures. This issue and the corrective actions are being tracked by the licensee in Condition Report 2007 002074 and has corrective action pending to modify valve circuitry but it has not been implemented.

The failure to correct a condition adverse to quality of ensuring reactor coolant pump seal cooling as described in the Updated Safety Analysis Report is a performance deficiency. The finding is more than minor because it is associated with the equipment performance attribute for the Initiating Events Cornerstone; and, it affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was determined to be of very low safety significance because the finding would not result in exceeding the Technical Specification limit for identified reactor coolant system leakage and would not have affected other mitigation systems resulting in a total loss of the seal cooling safety function. This finding is being cited because the licensee failed to establish measures to assure this condition adverse to quality was promptly identified and corrected. This finding has a crosscutting aspect in the area of human performance associated with the decision making component because, even though numerous instances of valve closures occurred since the first noncited violation, Wolf Creek downgraded the condition report. Using nonconservative assumptions, the licensee consistently viewed this issue as not having a risk impact because seal injection was not simultaneously lost. [H.1.b]

Inspection Report# : [2009002](#) (pdf)

Inspection Report# : [2009005](#) (pdf)

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## Mitigating Systems

**Significance:**  Jan 24, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

### Loss of Configuration Control Causes Loss of All Non-Vital Power

Inspectors identified a non-cited violation of Technical Specification

5.4.1.a, "Procedures," for implementation of an unauthorized modification by using a clearance order and a temporary procedure. This left the power source to a temporary protective relay unprotected. When another clearance order was being placed for main generator work, the temporary relay power source was lost when fuses were removed which supplied power to the temporary relay. This tripped the offsite power breaker to 13.8kV bus PA01 and tripped PA01 distribution breakers on January 24, 2012. Safety busses were unaffected because they were cross tied and being supplied by the No. 7 transformer. All non-vital systems lost power including normal service water which was removing core decay heat until operators could manually start and align essential service water pumps. Power to all systems was restored within approximately 24 hours. The inspectors found that the installation of temporary equipment was an unevaluated long standing practice. The temporary procedure was consistent with a system operating procedure when it was approved on January 17, 2012. This conclusion differed from Wolf Creek's apparent cause determination which did not identify the issue as an unevaluated modification. The inspectors concluded that they added value and considered the issue NRC identified. Initially, corrective actions included changing the clearance order to prevent removing of fuses to the temporary relay. After inspector questions, Wolf Creek blocked the use of the temporary procedure and procedure SYS MA-120 until further evaluation was completed. This has been entered into the corrective action program as condition reports 48182, 48642, and 51408.

Failure to control system configuration such that unplanned loss of power would not occur is a performance deficiency. The inspectors determined that this finding was more than minor because it impacted the mitigating systems cornerstone and its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, it impacted the configuration

control attribute of shutdown equipment lineup which created a loss of offsite power to 13.8kV bus PA01. The inspectors screened the loss of service water pumps B and C, A and B circulating water pumps, vital air conditioning units, emergency diesel generator starting air compressors, transformer XNB01 cooling fans, heat tracing, auxiliary boiler steam heating, the condensate storage tank makeup pump, and the refueling water storage tank makeup pump to Manual Chapter 0609, attachment G, checklist 4. Wolf Creek had inventory in the pressurizer with a time to boil greater than 2 hours. The inspectors screened the finding to Green or very low safety significance because it did not involve a loss of reactor coolant system inventory, did not affect reactor coolant system level instrumentation, did not affect the licensee's ability to terminate a leak path, did not affect the licensee's ability to add reactor coolant system inventory when needed, or degrade the licensee's ability to recover decay heat removal once it was lost. Additionally, the inspectors screened the loss of the electric fire pump and jockey (keep full) fire pump to Inspection Manual Chapter 0609.04. Specifically, these pumps were out of service for less than 24 hours, and therefore, screened to Green or very low safety significance. The inspectors identified that the cause of the finding had a human performance cross-cutting aspect in the area of resources because the loss of power was caused by a lack of complete, accurate and up-to-date design documentation, procedures, drawings, fuse labeling, and work orders necessary to support the temporary configuration established through TMP 12-001 [H.2.c].

Inspection Report# : [2012002](#) (pdf)

**Significance:**  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Incorrect Retraction of an Event that Could Have Prevented Fulfillment of a Safety Function**

The inspectors identified a Severity Level IV noncited violation of 10 CFR 50.73 because the licensee inappropriately retracted a licensee event report. On September 29, 2011, Wolf Creek issued Licensee Event Report 2011-004-01 which retracted the 10 CFR 50.73(a)(2)(v)(D) portion of the report for loss of both trains of automatic safety injection on March 19, 2011. The automatic functioning of safety injection is required by Technical Specification 3.3.2, function 1.b. Wolf Creek licensee event report 2011-004-00 was correct in its reporting the loss of safety function. In retracting this aspect, Wolf Creek credited manual action to restart safety injection and the long standing logic design. However, NUREG 1022, Section 3.2.7, specifies that inoperable systems required by the technical specifications be reported. This issue is entered into the licensee's corrective action program as condition report 46110.

The inspectors reviewed this issue in accordance with Inspection Manual Chapter 0612 and the NRC Enforcement Manual and determined that traditional enforcement was applicable to this issue because the NRC's regulatory ability was affected. Specifically, the NRC relies on the licensee to identify and report conditions or events meeting the criteria specified in regulations in order to perform its regulatory function, and when this is not done, the regulatory function is impacted. The inspectors used the Enforcement Policy and the available risk information to conclude that this violation is appropriately characterized as Severity Level IV.

Inspection Report# : [2011005](#) (pdf)

**Significance:**  Dec 12, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Alternative Shutdown Procedure**

The team identified a Green non-cited violation of Technical Specification 5.4.1.d for the failure to implement and maintain adequate written procedures covering fire protection program implementation. Specifically, the team identified two examples where the licensee failed to maintain an alternative shutdown procedure that ensured operators would prevent overfilling the pressurizer and steam generators, respectively. The licensee documented this deficiency in Condition Report 045442.

The failure to maintain adequate written procedures covering fire protection program implementation was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the significance of this finding using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because the performance deficiency affected fire protection defense-in-depth strategies involving post-fire safe shutdown systems. A senior reactor analyst performed a Phase 3 evaluation and determined this finding had very low risk significance based upon a bounding analysis

(Green). This finding did not reflect current licensee performance (Section 1R05.05.2).

Inspection Report# : [2011007](#) (pdf)

**Significance:**  Dec 12, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Ensure Post-Fire Safe Shutdown Components Remain Free of Fire Damage**

The team identified a Green non-cited violation of License Condition 2.C(5) because the licensee failed to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the licensee failed to properly analyze for fire damage in the form of shorts-to-ground related to the residual heat removal Train B refueling water storage tank suction valve and the pressurizer power-operated relief valves. Certain postulated shorts-to-ground could spuriously actuate these valves such that safe shutdown would be impacted. The licensee documented these deficiencies in Condition Reports 044912 and 045452, respectively.

The failure to protect the residual heat removal Train B suction cables and the pressurizer power operated relief valve cables against all modes of cable failure during post-fire safe shutdown circuit analysis was a performance deficiency. The performance deficiency was more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

The team used Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” because the performance deficiency affected fire protection defense-in-depth strategies involving post-fire safe shutdown. The team categorized the finding as having a high degradation rating because the post fire safe shutdown analysis was not complete. Because the Phase 1 screening criteria were not met, the team performed a Phase 2 analysis. The team walked down the affected fire area for each example as part of the Phase 2 quantitative screening. The team identified fire ignition sources and targets, and specific fire growth and damage scenario combinations for each example. The sum of the conditional core damage frequencies for the fire scenarios was  $5.15E^{-7}$ /year, which bounded the total change in core damage frequency associated with this performance deficiency.

This performance deficiency had a cross-cutting aspect in the area of human performance associated with decision making because the licensee did not use conservative assumptions during their design review process. Specifically, the licensee did not follow industry guidance related to performing a circuit analysis [H.1(b)] (Section 1R05.06).

Inspection Report# : [2011007](#) (pdf)

**Significance:**  Nov 04, 2011

Identified By: NRC

Item Type: FIN Finding

**Failure to Verify Isolation of Associated Circuits on Isolation Switches**

The team identified a finding because the licensee was not fully testing the isolation function of local transfer switches located at motor control center breakers for individual components. As a result, the licensee was not performing periodic verifications to confirm that local control circuits would be isolated from the effects of fire damage caused by a control room fire. The licensee documented this deficiency in Condition Report 045434.

The failure to maintain adequate written procedures covering fire protection program implementation was a performance deficiency. Specifically, the licensee failed to ensure that component specific transfer switch testing procedures verified proper circuit isolation from the control room in the event of a control room fire. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding using Inspection Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” because it affected fire protection defense-in-depth strategies involving post fire safe shutdown. Using Appendix F, Attachment 2, “Degradation Rating Guidance Specific to Various Fire Protection Program Elements,” the team determined that the finding constituted a low degradation of the safe shutdown area since the control room isolation

feature is expected to display nearly the same level of effectiveness and reliability as it would had the degradation not been present. This finding screened as having very low safety significance (Green). Since the failure to test the isolation function had not been verified since initial installation, the team determined that this failure did not reflect current performance (Section 1R05.05.1).

Inspection Report# : [2011007](#) (*pdf*)

**Significance:**  Nov 04, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Procedure Inadequacies Related to Cold Shutdown Repairs**

The team identified a Green non-cited violation of License Condition 2.C(5) because the licensee failed to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the licensee failed to provide an adequate procedure for performing cold shutdown repairs required for post-fire safe shutdown. The licensee documented the deficiencies in Condition Reports 045397 and 045417.

The failure to ensure that Procedure OFN RP-017A, "Hot Standby to Cold Shutdown from Outside the Control Room Due To Fire," Revision 0, could be implemented as written was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events (fire) to prevent undesirable consequences. The finding was evaluated for safety significance using NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." Since the finding was related to the ability to achieve and maintain cold shutdown, the finding screened to Green in Phase 1.

This performance deficiency had a cross-cutting aspect in the area of human performance associated with resources because the licensee did not prepare an accurate and up-to-date procedure that assured nuclear safety. Specifically, personnel did not verify that the steps in the revised procedure could be performed as written and that the components had proper labeling [H.2(c)] (Section 1R05.10).

Inspection Report# : [2011007](#) (*pdf*)

**Significance:**  Sep 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Follow ASME Code Cas OMN-1 for Butterfly Valves**

The inspectors identified a noncited violation of 10 CFR 50.55a, "Codes and Standards," when the licensee failed to correctly test a series of butterfly valves. The licensee installed seven Crane butterfly valves in the essential service water system in 2000 and 2002 but did not perform a preservice test under conditions as close as possible to the inservice test conditions or develop and perform an inservice stroke test under conditions as close to design basis conditions as required by their applicable code case. This issue is captured in the corrective action program as Condition Report 44218.

The issue is more than minor because it impacted the Mitigating Systems Cornerstone objective to ensure that to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609.04, the finding was determined to be of very low safety significance (Green) because the finding is not a design or qualification deficiency confirmed not to result in loss of operability or functionality; the finding does not represent a loss of system safety function; the finding does not represent actual loss of safety function of a single train for more than its technical specification allowed outage time; the finding does not represent an actual loss of safety function of one or more nontechnical specification trains of equipment designated as risk significant per 10 CFR 50.65 for more than 24 hours; and the finding does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors did not assign a crosscutting aspect because the finding was not indicative of current performance (Section 1R22).

Inspection Report# : [2011004](#) (*pdf*)

**Significance:**  Sep 22, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Emergency Operating Procedure for Steam Generator Tube Rupture**

The inspectors identified a Green noncited violation of Technical Specification 5.4.1.a, "Procedures," due to insufficient procedural direction to operations personnel to perform a subcooled recovery of a steam generator tube rupture if the ruptured steam generator cannot be isolated from any of the intact steam generators. On August 2, 2011, inspectors identified during simulator scenario validation that step 9 of Emergency Mitigation Guideline 3, "Steam Generator Tube Rupture," did not give adequate direction to operations personnel to mitigate a steam generator tube rupture event that required a subcooled recovery. The licensee entered the issue into their corrective action program as condition report 43515.

The finding is more than minor because the performance deficiency is associated with the procedure quality attribute of the mitigating systems cornerstone, and adversely affected the cornerstone's attribute to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance because the finding is a deficiency confirmed not to result in a loss of operability or functionality of the overall ability to mitigate an unisolable steam generator tube rupture, if Emergency Mitigation Guideline 3 is used correctly as written. The finding does not have a crosscutting aspect because the deficiency was incorporated into the procedure in May 2000 and was not considered indicative of current licensee performance (Section 4OA5.2).

Inspection Report# : [2011301](#) (*pdf*)

**Significance:**  Sep 01, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Testing Of Emergency Diesel Generator A**

The inspector identified a noncited violation of 10 CFR 50, Appendix B, Criterion XI, Test Control, with two examples, because the licensee failed to ensure that all testing required to demonstrate that the emergency diesel generators would perform satisfactorily in service was identified and performed. In the first example, the licensee failed to change the loading requirements in Surveillance Test Procedure STS KJ-005A, "Manual/Auto Start, Sync & Loading Of EDG (emergency diesel generator) NE01," when the design basis accident loading of the emergency diesel generators was increased. In the second example, the licensee failed to perform testing required by Regulatory Guide 1.9 and IEEE Standard 387 to recertify the system following replacement of the mechanical governor.

The finding is more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the significance determination process, the inspectors determined that the finding was of very low safety significance (Green) because it was a design or qualification issue that was confirmed not to represent an actual loss of safety function of the emergency diesel generator, since the unit was still able to operate properly in the isochronous mode. This finding was determined to have a crosscutting aspect in the area of human performance associated with the decision making component because the licensee did not use conservative assumptions in decision making and adopt a requirement to demonstrate that the proposed action was safe in order to proceed rather than a requirement to demonstrate that it was unsafe in order to disapprove the action. Specifically, the licensee decided not to perform all required certification testing per Regulatory Guide 1.9 Revision 3 prior to declaring Emergency Diesel Generator A operable following replacement of the mechanical governor [H.1(b)]. (Section 3.2)

Inspection Report# : [2011009](#) (*pdf*)

**Significance:**  May 23, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

## **Inadequate Procedure to Adjust the Compensation in Emergency Diesel Generator Governor**

A self-revealing noncited violation of Technical Specification 5.4.1.a, "Procedures," was identified for the failure to include essential information needed to correctly adjust the emergency diesel generator governor actuator compensation potentiometer in Work Order 10-327976-000. Specifically, on May 23, 2011, maintenance personnel adjusted the actuator compensation potentiometer by following instructions from the system engineer per Work Order 10-327976-000. Work Order 10-327976-000 did not contain the cautionary note from Procedure MPE NE-003, "Governor Adjustments for Emergency Diesel Generator NE01," which stated, "DO NOT set actuator compensation adjustor below 1.5." The maintenance personnel set the potentiometer to 1.0. This improper adjustment resulted in Emergency Diesel Generator A being declared inoperable due to excessive load swings on September 1, 2011.

The finding is more than minor because it was associated with the procedure quality attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance (Green) because it was a design or qualification issue that was confirmed not to represent an actual loss of safety function of the emergency diesel generator, because the unit was still able to operate properly in the isochronous mode. This finding was determined to have a crosscutting aspect in the Resources component of human performance because the licensee did not provide complete, accurate and up-to-date procedures/work orders to plant personnel because the licensee had not developed procedure guidance sufficiently detailed to ensure maintenance personnel properly adjusted the compensating actuator potentiometer for the electronic governor [H.2(c)]. (Section 3.1)

Inspection Report# : [2011009](#) (pdf)

**Significance:**  May 06, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Analyze for Vortexing in Containment Spray Additive Tank**

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to translate the design basis into instructions, procedures, and drawings. The inspectors found that the licensee failed to assess whether vortexing occurred in the containment spray additive tank in the event of a design-basis accident. Wolf Creek entered this issue in the corrective action program as Condition Report 38715.

Failure to implement design control measures to analyze whether containment spray piping remained full of water was a performance deficiency. This finding was more than minor because it affected the design control attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of the containment spray system to respond to initiating events and prevent undesirable consequences. Specifically, the inspectors had reasonable doubt on the capability of the containment spray system to properly inject because of vortexing in the containment spray additive tank. The inspectors performed the significance determination using Inspection Manual Chapter 0609.04. The finding was determined to be of very low safety significance (Green) because it was a design or qualification deficiency confirmed not to result in loss of operability or functionality. Although the failure to have this calculation had existed since original construction, the inspectors determined this finding reflected current performance since the licensee was required to evaluate likelihood of tanks allowing gas intrusion into the emergency core cooling systems in response to Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems." Consequently, this finding had problem identification and resolution cross-cutting aspects associated with the corrective action program in that the licensee did not thoroughly evaluate the potential for gas intrusion from all possible tanks [P.1(c)](Section 40A5).

Inspection Report# : [2011003](#) (pdf)

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## **Barrier Integrity**

**Significance:**  Mar 26, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Test ASME O&M Code Category A Valves in Post-LOCA Flow Path**

The inspectors identified a non-cited violation of 10 CFR Part 50.55a(f)(4), "Codes and Standards," for failure to adequately demonstrate that the seat leakage for 12 emergency core cooling system and containment spray valves remained within acceptable limits. These valves have a combined allowable leakage rate of 3.8 gpm to ensure that control room operator radiation doses remain within regulatory limits during an accident. Since the flowpaths have valves for which seat leakage is limited to a specific maximum amount, the inspectors identified that they should be considered Category A valves as specified in ASME OM (American Society of Mechanical Engineers Operations & Maintenance) Code. Wolf Creek subsequently took corrective action to perform valve seat leakage testing on March 10, 2012, which demonstrated that leakage was within acceptable limits. Additionally, Wolf Creek plans to change Chapter 15 of the USAR and correct its ASME OM Code basis document. This issue was entered into the licensee's corrective action program as condition report 46927.

Failure to correctly identify and perform testing needed to assure plant design for control room habitability is a performance deficiency. This finding is greater than minor because it was associated with the Barrier Integrity Cornerstone attribute of configuration control and affects the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, it affects the design control objective by failing to ensure that design limits were met on a periodic basis. Using Inspection Manual Chapter 0609.04, the issue was determined to not impact public and control room dose (above regulatory limits), it did not impact the control room due to toxic gas, it did not represent an actual open containment bypass path (above of regulatory limits), and did not impact hydrogen igniters. Therefore, this finding was found to be of very low safety significance. Also, public dose was not impacted with a potential radiation dose above a 10 CFR Part 50, Appendix I criteria. This finding did not have a cross-cutting aspect since the error associated with the inservice testing program was not reflective of current licensee performance because the failure to identify and include these valves occurred more than 3 years ago.

Inspection Report# : [2012002](#) (*pdf*)

**G**

**Significance:** Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Preconditioning of 480 Vac Breakers Prior to Required Surveillance Testing**

On November 14, 2011, the inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for pre-conditioning of the 480 Vac breaker for the containment cooling fan D prior to performance of the periodic functional test to satisfy Technical Requirements Manual Surveillance 3.8.11.3. Testing consisted of injecting a current in excess of the breaker's setpoint and measuring the response time. The licensee was observed to perform preventive maintenance activities consisted of cleaning, lubricating, inspecting, and calibrating the circuit breakers, then performed as-left surveillance testing. The inspectors concluded that the preventive maintenance activities were likely to positively impact the surveillance test results. The inspectors identified that the practice had occurred with other 480 Vac breakers because Wolf Creek personnel believed that the performance of as-left testing after preventive maintenance constituted a surveillance test.

The inspectors determined that mixing preventive maintenance and surveillance testing such that the containment cooling fan breaker was preconditioned was a performance deficiency. The finding was more than minor because it could become a more safety significant concern if left uncorrected. Specifically, the programmatic practices could mask safety-related circuit breaker degradation. The inspectors evaluated the significance of this finding under the barrier integrity cornerstone using Phase 1 of Inspection Manual Chapter 0609.04, and determined that the finding had very low safety significance. Specifically, the finding does not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, or spent fuel pool; or represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere; and does not represent an actual open pathway in the physical integrity of the reactor containment; or a heat removal component. The inspectors determined that the finding had a cross-cutting aspect in the area of human performance associated with work control. Specifically, the work order and procedures were performed with competing requirements such that workers had to choose the correct sequence of activities [H.3(b)] (Section 1R22).

Inspection Report# : [2011005](#) (*pdf*)

**Significance:**  Aug 10, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Technical Support Center External Door Propped Open without Impairment**

The inspectors identified a noncited violation of 10 CFR 50.47, "Emergency Plans," for the failure to maintain an adequate emergency facility. The technical support center doors were propped open during maintenance for 82 days without a breach permit, leaving the licensee with no procedural controls to maintain the ability of the technical support center to withstand the 100-year recurrence winds as designed. The licensee's procedures would have caused operations personnel to review breaches and shut doors for a tornado event. This issue is captured in the corrective action program as Condition Report 42495.

The issue was more than minor because it impacted the facilities and equipment attribute of Emergency Preparedness Cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors used the emergency preparedness significance determination process and determined that the finding was Green because changes were made to the technical support center that did not comply with the plan and did not have compensatory actions, but the facility remained functional. The inspectors found that the cause of the finding had a crosscutting aspect in the area of human performance associated with the resources component, in that the breach procedure was not consistent with the design of the technical support center and resulted in missed compensatory action [H.2.c]

Inspection Report# : [2011004](#) (*pdf*)

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **Physical Protection**

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

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## **Miscellaneous**

Last modified : May 29, 2012