Columbia Generating Station
1Q/2007 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Diesel Generator Test Procedure
Green. A green self-revealing non-cited violation (NCV) of technical specification 5.4.1.a was identified for the failure to follow a diesel generator surveillance test procedure. This resulted in the unintentional inoperability of the backup transformer. Energy Northwest entered the issue into their corrective action program for evaluation and resolution.

This finding was more than minor because it had an attribute of human performance which affected the mitigating systems cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low risk significance (Green) because it was not a qualification issue confirmed not to result in loss of operability, did not represent a loss of safety function for a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to external events. Additionally, the cause of the finding is related to the cross-cutting aspect of human performance with a work practices component in that self and peer-checking techniques were not implemented properly during the conduct of the test procedure. This resulted in the failure to follow procedure.
Inspection Report# : 2006005 *(pdf)*

Significance: G Dec 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Identify Degraded Conduit Jackets
A green NRC identified NCV of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” was identified for failing to promptly identify conditions adverse to quality associated with loss of full environmental qualification of plant components due to degraded flexible electrical conduit jackets. Energy Northwest entered the issue into their corrective action program and took immediate action to repair the identified degraded conduit jackets and to plan additional periodic plant walkdowns to identify additional degraded conduit jackets.

The finding was more than minor because it was associated with the equipment performance 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 preclude undesirable consequences (i.e., core damage). The finding was determined to be of very low safety significance (Green) because the finding was a qualification deficiency confirmed not to result in loss of operability per “Part 9900 Technical Guidance, Operability Determination Process for Operability and Functional Assessment.” This finding had a crosscutting aspect associated with problem identification and resolution with a corrective action program component. Specifically, Energy Northwest failed to assess and trend information from the corrective action program in the aggregate resulting in the failure to identify an adverse trend regarding flexible electrical conduit jackets.
Inspection Report# : 2006005 *(pdf)*

Significance: G Dec 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation

Inadequate Alternate Boron Injection Emergency Procedure
Green. A green NRC identified NCV of technical specification 5.4.1.a was identified for the failure to provide an adequate procedure for alternate boron injection. Specifically, procedure Emergency Support Procedure 5.5.8, "Alternate Boron Injection," Revision 8, failed to direct venting of a temporarily installed hose between the standby liquid control boron storage tank and the reactor core isolation cooling pump suction. As a result, degraded reactor core isolation cooling pump performance could occur. Energy Northwest entered the issue into their corrective action program and revised the procedure to vent the hose.

This finding was more than minor because the finding had an attribute of procedure quality which affected the mitigating systems cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The finding was of very low risk significance (Green) because it was not a qualification issue confirmed not to result in loss of operability, did not represent a loss of safety function for a single train or for the system, and did not screen as potentially risk significant due to external events.
Inspection Report# : 2006005 *(pdf)*

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to implement adequate design control measures for the station's safety-related batteries
The inspectors identified a noncited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," when Energy Northwest failed to perform adequate design reviews to maintain appropriate control of the design and qualification of the station's safety related batteries. Specifically, the repetitive failure to provide adequate engineering analysis supporting the temporary installation of a non class 1E battery rail charger on a safety-related battery was not commensurate with ensuring the reliability of the station's safety-related batteries.

This finding was more than minor because the finding was a design control issue which affected the mitigating systems cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Utilizing MC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening, the inspectors determined that the finding was of very low risk significance because it was a qualification issue confirmed not to result in loss of operability. Additionally, the finding did not represent a loss of safety function for a single train or for the system, and did not screen as potentially risk significant due to external events. This finding had cross-cutting aspects in the area of problem identification and resolution with the corrective action component in that the licensee did not thoroughly evaluate design issues with the nonqualified rail charger, as documented in Condition Report 2-05-01894. This resulted in additional examples of the failure to maintain adequate design control of the batteries.
Inspection Report# : 2006004 *(pdf)*

Significance: G Jul 13, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure Redundant Safe Shutdown Systems Located In the Same Fire Area Are Free of Fire Damage
The team identified a noncited violation (NCV) of License Condition 2.C.(14), Fire Protection Program (Generic Letter 86-10), for failure to ensure that redundant trains of safe shutdown systems in the same fire area were free of fire damage. The Columbia Generating Station's approved fire protection program states that it complies with the requirements of Section III.G of 10 CFR 50, Appendix R. Section III.G.2 of Appendix R requires that cables whose fire damage could prevent the operation or cause maloperation of safe shutdown functions be physically protected from fire damage. Contrary to this requirement, the licensee implemented a methodology that utilized manual operator actions for fire other than a control room fire to mitigate the effects of fire damage in lieu of providing physical protection from fire damage.

This finding is of greater than minor safety significance because it impacted the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to external events (such as fire) to prevent undesirable consequences. The team found that the manual operator actions were reasonable (as defined in Enclosure 2 of Inspection Procedure 71111.05T), and could be performed within the analyzed time limits. Since the manual operator actions were considered reasonable, the significance determination process was not entered. The team determined that this finding is of very low safety significance (Green) in accordance with the guidance in Enclosure 2 to Inspection Procedure 71111.05T.

Inspection Report# : 2006008 *(pdf)*

Significance: G Jul 13, 2006
Identified By: NRC
Item Type: AV Apparent Violation
Lack of an Evaluation of the Effect of Fire on the Reactor Protection System / Scram Capability
The team identified an apparent violation (AV) of License Condition 2.C.(14) concerning failure to evaluate the potential effect of fire damage on the Reactor Protection System circuits relied upon for reactor scram capability in the approved fire protection program. Although the reactor protection and control rod drive systems are identified as part of the minimum safe shutdown systems necessary to accomplish the reactivity control shutdown function, and are credited in the post-fire safe shutdown procedures developed by the licensee, the potential for fire to cause a loss of this required shutdown function had not been evaluated. The licensee's post-fire safe shutdown analysis included the assumption that the operator would initiate and confirm shutdown before control circuits were damaged, therefore, evaluation of the effects of fire damage to the reactor protection (RPS) and control rod drive (CRD) systems was not necessary. Review of the RPS circuits identified the potential for a fire in the control room to prevent the scram of one rod group.

The finding is greater than minor in that it affected the ability to achieve and maintain hot shutdown following a control room fire. This finding is associated with the Mitigating Systems cornerstone and the respective attribute of protection against external factors (e.g., fire). This finding impacted the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to external events (such as fire) to prevent undesirable consequences. It is the NRC's understanding that the licensee does not consider these circuit vulnerabilities to be violations of NRC requirements. The licensee considers multiple hot shorts due to fire in the control room to be outside of the plant licensing basis for the Fire Protection Program. Specifically, in this case, two hot shorts due to fire induced circuit damage would be required to prevent the scram of one rod group. The NRC staff and the industry are currently working on developing a resolution methodology to address these types of potential fire induced circuit failures. The team concluded that this violation meets the criteria of the NRC Enforcement Manual Section 8.1.7.1 for deferring enforcement actions for postulated fire induced circuit failures.

Inspection Report# : 2006008 *(pdf)*

Significance: G Jul 03, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Promptly Identify Degraded Shaft Couplings in Standby Service Water Pumps
Green. A Green self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified for failure to promptly identify conditions adverse to quality associated with the safety-related standby service water pumps. Specifically, Energy Northwest failed to implement actions identified in 1994 in response to external operating experience (Information Notice 93-68) associated with the standby service water pumps. The failure to implement the actions resulted in the failure to promptly identify that shaft couplings on standby service water pump 1A pump shaft had failed due to intergranular stress corrosion cracking prior to the failure revealing itself on June 14, 2005. Energy Northwest later determined during an inspection in December 2005, that a coupling on standby service water pump 1B pump shaft had also failed, although the pump continued to demonstrate acceptable performance. Energy Northwest replaced both standby service water pumps and implemented corrective actions to ensure periodic future inspections of service water pumps 1A and 1B to ensure their operational readiness.

This finding is greater than minor because it was an equipment reliability issue which impacted the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Although the finding affected the mitigating systems cornerstone objectives, the finding was of very low safety significance because the finding did not result in a loss of function of standby service water pump 1A, did not result in a loss of safety function of the system, did not represent a loss of safety function of non-technical specification equipment, and did not screen as potentially risk significant due to external events. The cause of the finding was related to the cross-cutting element of problem identification and resolution because of Energy Northwest's failure to implement identified actions to inspect either standby service water pump in response to Information Notice 93-68. (Section 4OA2.2)

Inspection Report# : 2006011 *(pdf)*

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Modification of LPCS
Green. An NRC identified noncited violation of 10CFR50, Appendix B, Criterion III, “Design Control,” was identified when Energy Northwest failed to ensure the adequacy of a design modification, implemented in 1992, to a low pressure core spray instrument pipe associated with the discharge header flow element. Energy Northwest failed to ensure that steady state vibration stress levels in the pipe were within code standards after the modification was performed. Stress levels were later determined to exceed endurance stress limit standards after the NRC identified concerns with the magnitude of vibration the pipe exhibited during operation of the low pressure core spray pump.

This finding was determined to be 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 systems that respond to initiating events. The finding was determined to be of very low safety significance because the finding was a qualification deficiency confirmed not to result in loss of operability per “Part 9900 Technical Guidance, Operability Determination Process for Operability and Functional Assessment”. A cross-cutting aspect associated with problem identification and resolution was identified when Energy Northwest failed to take vibration data at the earliest opportunity when the low pressure core spray pump was next operated. This resulted in a substantial delay in Energy Northwest determining that the instrument tubing vibration stress levels exceeded ASME code endurance limits.
Inspection Report# : 2006003 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : June 01, 2007