

Palo Verde 3 4Q/2004 Plant Inspection Findings

Initiating Events

G**Significance:** Sep 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO REMOVE PIPE SUPPORT LEADS TO RCS PRESSURE BOUNDARY LEAK

Green. A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified for the failure to implement a modification. The modification should have removed a pipe support associated with a high pressure safety injection system drain line. The failure to remove the pipe support, combined with high vibrations, resulted in a reactor coolant system pressure boundary leak from a cracked socket weld upstream of high pressure safety injection header drain Valve 1-P-SIA-V056. The issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 2669474.

The finding is greater than minor since it is associated with the equipment performance and design control attributes of the initiating events cornerstone and affects the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions. Using the Phase 1 worksheet in Manual Chapter 0609, "Significance Determination Process," this finding is determined to have very low safety significance because assuming worst case degradation, the leak would not have exceeded the Technical Specification limit for identified reactor coolant system leakage and mitigating systems were not affected.

Inspection Report# : [2004004\(pdf\)](#)**G****Significance:** Aug 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURS FOR OPERATION OF THE SPENT FUEL HANDLING MACHINE

The inspectors identified a noncited violation of Technical Specification 5.4.1 associated with a failure to operate the spent fuel handling machine in accordance with Procedure 78OP-9FX03, "Spent Fuel Handling Machine," Revision 16. There were three instances of this: (1) On October 4, 2002, the spent fuel handling machine operator moved fuel assemblies of two differing weights and was not cognizant of design differences of the fuel assemblies and did not stop fuel movement when the load was greater than 50 lbs. different from expected; (2) On October 4, 2002, the spent fuel handling machine operator failed to verify that the hoist was in its full up position prior to moving a spent fuel assembly, and (3) later on October 4, 2002, another spent fuel handling operator failed to verify that the hoist was in its full up position prior to moving a spent fuel assembly. In both Examples (2) and (3), the operators failed to verify the "UP LIMIT" light was on and failed to verify the hoist indicator was at the "UPLIMIT." As a result, in Example (3), the one fuel assembly was damaged. These issues were contrary to Procedure 78OP-9FX03 and resulted in damage to the lower grid assembly of Fuel Assembly P1M316.

This finding is greater than minor because it had an actual impact of damage to an irradiated fuel assembly and, therefore, could be reasonably viewed as a precursor to a significant event. If the fuel cladding had failed, it could have caused a release of fission products to the environment. The finding is of very low safety significance because all mitigation systems were available during the fuel movement operations and should have prevented an unplanned release of radioactive material to the environment above the limits of 10 CFR Part 100. This finding also had crosscutting aspects in the area of human performance.

Inspection Report# : [2004011\(pdf\)](#)**G****Significance:** Aug 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PRESCRIBE ADEQUATE INSTRUCTIONS FOR ENTRY INTO ABNORMAL OPERATING PROCEDURE, PVNGS PROCEDURE 40AO-9ZZ22, "FUEL DAMAGE," REVISION 2 THROUGH 6

The inspectors identified a noncited violation of Technical Specification 5.4.1 associated with an inadequate abnormal operating procedure. Specifically, the inspectors determined that Palo Verde Nuclear Generating Station Procedure 40AO-9ZZ22, "Fuel Damage," Revisions 1 through 6, were not adequate in that the entry conditions never required operations personnel to enter the procedure and take actions to mitigate the event. Step 1.1 states, in part, "Section 3.0, Irradiated Fuel Damage may be entered when any of the following conditions exist . . . when equipment or component failures result in any of the following: irradiated fuel assembly contacting a solid structure; bubbles emerging from a spent fuel assembly; bent, twisted, or warped spent fuel assembly; or visual damage to spent fuel pin cladding." Since this abnormal operating procedure was never entered, applicable actions were never considered during the Fuel Assembly P1M316 event.

This finding is greater than minor because actions taken in response to fuel handling errors could result in significant fuel cladding damage and

effect the barrier cornerstone. The finding is of very low safety significance because all mitigation systems were available and should have prevented an unplanned release of radioactive material to the environment above the limits of 10 CFR Part 100. This finding also had crosscutting aspects in the area of problem identification and resolution.

Inspection Report# : [2004011\(pdf\)](#)

G

Significance: Jul 08, 2004

Identified By: NRC

Item Type: FIN Finding

POOR MATERIAL CONDITION OF THE SPENT FUEL HANDLING MACHINE

The inspectors identified a self-revealing finding of very low safety significance (green) associated with the material condition of the spent fuel handling machine. A number of issues related to material condition, which affected spent fuel handling machine operations, was identified. These included intermittent overload and underload conditions with no identified cause, upender limit switches that often failed or required adjustments during fuel movement, an unreliable hydraulic power unit for the upender machine which occasionally resulted in the upender drifting from the vertical position, and the spent fuel handling machine trolley occasionally stopped for no apparent reason.

This finding is greater than minor because it had an actual impact resulting in damage to an irradiated fuel assembly and, therefore, could be reasonably viewed as a precursor to a significant event. If the fuel cladding had failed, it could have caused a release of fission products. The finding is of very low safety significance because all mitigation systems were available and should have prevented an unplanned release of radioactive material to the environment above the limits of 10 CFR Part 100.

Inspection Report# : [2004011\(pdf\)](#)

G

Significance: Jul 08, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE CORRECTIVE ACTIONS CONTRIBUTED TO DAMAGE TO FUEL ASSEMBLY

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failing to effectively correct conditions adverse to quality that contributed to the damage to irradiated Fuel Assembly P1M316. Specifically, Criterion XVI states, in part, that ". . . conditions adverse to quality, such as malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected." The licensee failed to effectively correct conditions adverse to quality, which included repeated violations of equipment operating procedures and conduct of operations procedures, as well as long-standing degraded material condition of the fuel handling equipment, that ultimately contributed to the damage of irradiated Fuel Assembly P1M316.

This finding is greater than minor because it had an actual impact of damage to an irradiated fuel assembly and, therefore, could be reasonably viewed as a precursor to a significant event. If the fuel cladding had failed, it could have caused a release of fission products. The finding is of very low safety significance because all mitigation systems were available and should have prevented an unplanned release of radioactive material to the environment above the limits of 10 CFR Part 100. This finding also had crosscutting aspects in the area of problem identification and resolution.

Inspection Report# : [2004011\(pdf\)](#)

G

Significance: Jun 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

SPENT FUEL POOL WATER SIPHON DUE TO CHECK VALVE FAILURE

A self-revealing noncited violation of Technical Specification 4.3.2 was identified for the failure to properly maintain a check valve (siphon breaker) between the vacuum drying skid and the spent fuel pool, such that, the spent fuel pool could not be inadvertently drained below 137 feet 6 inches. On May 14, 2004, the check valve failed to open and caused an inadvertent siphoning of approximately 20 gallons from the Unit 3 spent fuel pool to the cask washdown pit. Had the draindown continued, the spent fuel pool level could have decreased below 137 feet 6 inches. This issue was entered into the corrective action program as CRDR 2709518.

The finding is greater than minor because it affected the configuration control attribute of the initiating events cornerstone. This finding cannot be evaluated by the significance determination process because Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," and Appendix G, "Shutdown Operations Significance Determination Process," do not apply to the spent fuel pool. This finding is determined to be of very low safety significance by management review because radiation shielding was provided by the spent fuel pool water level, the spent fuel pool cooling and fuel building ventilation systems were available, and there were multiple sources of makeup water.

Inspection Report# : [2004003\(pdf\)](#)

G

Significance: Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PREVENT LOSS OF SPENT FUEL POOL INVENTORY EVENTS THROUGH TIMELY CORRECTIVE ACTIONS

A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to identify the root cause of spent fuel pool inventory loss events and implement corrective actions to preclude recurrence. Specifically, the improper positioning of a fuel pool cleanup suction valve and inadequate level monitoring resulted in three losses of spent fuel pool inventory events. This finding involves problem identification and resolution cross-cutting aspects associated with the failure to identify root causes and implement corrective actions. The issue also involved human performance cross-cutting aspects associated with mispositioned valves and awareness of plant conditions by operations personnel. This issue was entered into the corrective action program as CRDR 2599869.

The finding is greater than minor because it affected the configuration control and human performance attributes of the initiating events cornerstone objective. This finding cannot be evaluated by the significance determination process because Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of reactor Inspection Findings for At-Power Situations," and Appendix G, "Shutdown Operations Significance Determination Process," do not apply to the spent fuel pool. This finding is determined to be of very low safety significance by management review because radiation shielding was provided by the spent fuel pool water level, the spent fuel pool cooling and fuel building ventilation systems were available, and there were multiple sources of makeup water.
Inspection Report# : [2004003\(pdf\)](#)

Mitigating Systems

G**Significance:** Dec 15, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW THE OPERABILITY DETERMINATION PROCESS FOR A DEGRADED CONDITION

A noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for failing to follow documented procedures when performing activities affecting quality. Administrative Procedure 40DP-90P26, "Operability Determination," was not followed when performing an operability assessment of emergency diesel generator fuel oil transfer pump Train A following identification of water in the electrical conduit and junction boxes associated with the power supply to the pump. Specifically, licensee personnel failed to consider water intrusion into the electrical conduit for emergency diesel generator fuel oil transfer pump Train A as a condition that could affect the ability of the emergency diesel generator to perform its specified function, and consequently, declared emergency diesel generator Train A operable. The finding involved problem identification and resolution crosscutting aspects in that licensee personnel failed to recognize water intrusion into the conduit box as a potential deficiency that could impact emergency diesel generator operability until prompted by the inspectors. This issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 2763326.

The finding is greater than minor since it is associated with the equipment performance attribute of the mitigating system cornerstone and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. Using the Significance Determination Process Phase 1 Worksheet, this finding is determined to have very low safety significance because it only affects the mitigating system cornerstone and was a deficiency that did not result in the actual loss of the safety function of the emergency diesel generator.

Inspection Report# : [2004005\(pdf\)](#)**Significance:** TBD Dec 09, 2004

Identified By: NRC

Item Type: AV Apparent Violation

FAILURE TO MAINTAIN DESIGN CONTROL OF CONTAINMENT SUMP RECIRCULATION PIPING

The team identified an apparent violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to establish measures to assure design basis information was translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to maintain the safety injection sump suction piping full of water in accordance with the Updated Final Safety Analysis Report. This nonconformance had the potential to significantly affect the available net positive suction head described in the Updated Final Safety Analysis Report for the high pressure safety injection and containment spray pumps, since the analysis assumed the piping would be maintained full of water.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. The finding has a potential safety significance greater than very low significance (i.e., Greater than Green) based on the results of a Significance Determination Process, Phase 3 analysis.

Inspection Report# : [2004014\(pdf\)](#)**G****Significance:** Dec 09, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW PROCEDURE

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," involving the

failure of engineering and operations personnel to implement requirements in the station's condition reporting and operability determination procedures following identification of a degraded condition. Specifically, engineering personnel did not promptly notify operations personnel of a condition that impacted the safety function of the high pressure safety injection and containment spray systems. In addition, operations personnel did not complete an immediate assessment of operability once they were informed of the degraded condition. This finding had crosscutting aspects associated with problem identification and resolution, since engineering personnel did not forward corrective action program documents regarding the degraded condition to the control room in a timely manner and operations personnel did not complete a prompt operability assessment. This finding also involved crosscutting aspects associated human performance, since engineering and operations personnel did not adequately communicate the status of the engineering department's efforts to review the degraded condition.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and adversely affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. This finding has very low safety significance based on the results of a Significance Determination Process, Phase 3 analysis.

Inspection Report# : [2004014\(pdf\)](#)

Significance: SL-IV Dec 09, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM WRITTEN SAFETY EVALUATION IN ACCORDANCE WITH 10 CFR 50.59 REQUIREMENTS

The team identified three examples of a noncited, Severity Level IV violation of 10 CFR 50.59 requirements involving the failure to perform written safety evaluations prior to implementing changes to the facility. The first example involved a change for using manual actions in lieu of automatic actions as compensatory measures to support the safety functions of the high pressure safety injection and containment spray systems during postulated design basis loss-of-coolant accident conditions following a recirculation actuation signal. The second example involved operation of emergency core cooling systems with a 10-20 cubic foot void in the suction piping. The third example involved the failure to perform a written safety evaluation for changes involving filling the containment sump with borated water to a level above the containment sump safety injection recirculation piping. These changes were implemented in response to identifying that the safety injection system was not being maintained full of water.

In accordance with Inspection Manual Chapter 0612, Appendix B, "Issue Disposition Screening," the team determined that traditional enforcement applied because this finding may have impacted the NRC's ability to perform its regulatory function. The severity level of this finding was assessed as having very low safety significance reflective of a Severity Level IV violation. This determination was based in part on use of the significance determination process.

Inspection Report# : [2004014\(pdf\)](#)

Significance: TBD Dec 09, 2004

Identified By: NRC

Item Type: AV Apparent Violation

FAILURE TO OBTAIN PRIOR NRC APPROVAL FOR A CHANGE TO THE FACILITY INVOLVING MAINTAINING A SIGNIFICANT SEGMENT OF CONTAINMENT SUMP SAFETY INJECTION RECIRCULATION PIPING VOID OF WATER

The team identified an apparent violation of 10 CFR 50.59 requirements for the licensee's failure to perform a written safety evaluation and receive NRC approval prior to implementing changes to the facility in 1992 which involved draining, and maintaining drained, a significant segment of containment sump safety injection recirculation piping during normal plant operations. This change resulted in the failure to maintain the safety injection piping full of water in accordance with the Updated Final Safety Analysis Report. This represented an unreviewed safety question since it increased the probability of a malfunction of equipment important to safety previously evaluated in the safety analysis report.

In accordance with Inspection Manual Chapter 0612, Appendix B, "Issue Disposition Screening," the team determined that traditional enforcement applied because this finding may have impacted the NRC's ability to perform its regulatory function. This is an apparent violation pending the results of a predecisional enforcement conference.

Inspection Report# : [2004014\(pdf\)](#)

Significance:  Oct 05, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

EXCESSIVE RCS DRAIN RATES USED TO ESTABLISH MIDLOOP CONDITIONS

A noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for an inadequate procedure which resulted in a reactor coolant system level deviation during the reactor coolant system draindown to hot midloop conditions. Specifically, Procedure 40OP-9ZZ16, "RCS Drain Operations," Revision 45, was inadequate in that it did not provide reduced drain rates or increased hold points to minimize the excessive difference between actual and indicated reactor coolant system level caused by static head difference between the pressurizer/surge line and the reactor. The finding involved problem identification and resolution crosscutting aspects that contributed to the finding in that engineering documents were available that specified correct drain rates, but these drain rates were not referenced until NRC inspectors questioned the justification of the procedurally allowed values. This issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 2742525.

The finding is greater than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone and

affects the cornerstone objective of ensuring the reliability of systems that respond to initiating events. The inadequate procedure resulted in an actual indicated level transient while the reactor coolant system was being drained in reduced inventory conditions. Using Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," this finding is determined to have very low safety significance because the event did not constitute a loss of control and did not represent a finding requiring quantitative assessment. The finding did not increase the likelihood of loss or cause a degradation in the ability to restore decay heat removal, reactor coolant system inventory, offsite power, alternate core cooling, or containment.

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

G

Significance: Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

UNTIMELY LUBRICATION OF REACH RODS FOR SAFETY-RELATED MANUAL VALVES

Green. A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to promptly correct degraded conditions associated with reach rods on safety-related manual valves. The issue involved problem identification and resolution cross-cutting aspects associated with untimely prioritization of work necessary to correct degraded equipment conditions. This issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 2328588.

The finding was greater than minor safety significance because if left uncorrected, it could become a more significant safety concern in that the failure to perform maintenance on reach rod assemblies could result in an inability to operate safety-related manual valves. This finding is associated with the equipment performance attribute of the mitigating systems cornerstone and affects the cornerstone objective of ensuring the reliability of systems that respond to initiating events. Using the Phase 1 worksheet in Manual Chapter 0609, "Significance Determination Process," the finding is determined to have very low safety significance because it only affected the mitigating systems cornerstone and there was not a loss of safety function.

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

G

Significance: Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

TURBINE DRIVEN AUXILIARY FEEDWATER PUMP GOVERNOR POWER SUPPLY RESISTOR FAILURES

Green. A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to correct a significant condition adverse to quality. The adverse condition involved failed resistors in the power supply to the turbine driven auxiliary feedwater pump governor control circuits in Units 2 and 3 that had transportability to Unit 1. The finding involved problem identification and resolution cross-cutting aspects associated with engineering personnel not performing an adequate extent of condition review. The finding also involved human performance cross-cutting aspects associated with engineering and maintenance personnel not communicating correct technical information. This issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 2746954.

The finding was greater than minor because if left uncorrected, it could have become a more significant safety concern in that the Unit 1 turbine driven auxiliary feedwater pump could have experienced an unnecessary failure. This finding is associated with the equipment performance attribute of the mitigating systems cornerstone and affects the cornerstone objective of ensuring the reliability of systems that respond to initiating events. Using the Phase 1 worksheet in Manual Chapter 0609, "Significance Determination Process," the finding is determined to have very low safety significance because it only affected the mitigating systems cornerstone and did not result in an actual loss of safety function for the auxiliary feedwater system.

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

G

Significance: Sep 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

REACTOR LEVEL ANOMALY WHILE IN REDUCED INVENTORY

Green. A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for an inadequate procedure which resulted in an unexpected reactor coolant system level anomaly during the Unit 1 reactor coolant system draindown to hot midloop conditions. Specifically, Procedure 40OP-9ZZ16, "RCS Drain Operations," did not provide reduced drain rates or increased hold points when only the reactor head vent was utilized to support draining evolutions. This issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 2695262.

The finding was greater than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone and affects the cornerstone objective of ensuring the reliability of systems that respond to initiating events. The inadequate procedure resulted in an actual unexpected level transient while the reactor coolant system was being drained in reduced inventory conditions. Using Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," this finding is determined to have very low safety significance because the event did not constitute a loss of control and did not represent a finding requiring quantitative assessment. The finding did not increase the likelihood of loss or cause a degradation in the ability to restore decay heat removal, reactor coolant system inventory, offsite power, alternate core cooling, or containment.

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

G**Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROMPTLY IDENTIFY AND CORRECT A CONDITION ADVERSE TO QUALITY

Green. A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to assure that significant conditions adverse to quality were promptly identified and corrected. Specifically, maintenance personnel failed to promptly identify that retaining ring slots were not adequately sized to allow the use of the standard lock pins, contributing to the damage to the steam generator nozzle dam diaphragms. Subsequent to the identification, maintenance personnel failed to correct the condition by not implementing the actions recommended by plant engineers. The finding involved problem identification and resolution cross-cutting aspects associated with engineering personnel not performing an adequate extent of condition review. That is, this finding was the direct result of licensee personnel's failure to promptly identify and correct a condition adverse to quality. This issue was entered into the licensee's corrective action program as Condition Report/Discrepancy Requests 2686201 and 2686271.

This finding was greater than minor because it is associated with the mitigating systems cornerstone and affects reactor coolant system boundary performance. Specifically, the plant operated for an extended period in reduced inventory as a result of not correcting the incompatibility between the nozzle dams and the locking ring. Using Manual Chapter 0609, "Significance Determination Process," this finding is determined to have very low safety significance because the senior reactor analysts' Phase 2 and 3 analyses determined that the increase in core damage frequency was approximately $3X10^{-7}$.

Inspection Report# : [2004004\(pdf\)](#)**G****Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

INEFFECTIVE CORRECTIVE ACTIONS TO ADDRESS AN INADEQUATE SERVICE WATER PIPING INSPECTION PROGRAM

Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to promptly correct the lack of an adequate routine inspection and maintenance program for essential spray pond system piping and components. The finding has been entered into the licensee's corrective action program as Condition Report/Disposition Request 2732683. The finding had problem identification and resolution crosscutting aspects associated with engineering personnel not entering deficiencies into their licensee commitment tracking system and not generating a condition report/disposition request.

This finding is greater than minor because it affected the reactor safety mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. If left uncorrected the finding could become a more significant safety concern in that inspections of spray pond piping was not performed as committed to in the licensee's Generic Letter 89-13 response. The finding is of very low safety significance because the issue constituted a qualification deficiency that did not result in a loss of function per Generic Letter 91-18, "Information to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded and Nonconforming Conditions," Revision 1.

Inspection Report# : [2004004\(pdf\)](#)**G****Significance:** Sep 24, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADDRESS EMERGENCY DIESEL GENERATOR CIRCUIT FAILURE

A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified because the licensee failed to implement their corrective action program when an emergency diesel-generator excitation circuit failed. The failure precluded the emergency diesel generator from achieving rated voltage within the required time.

The finding was greater than minor because it was associated with the equipment performance attributes of the mitigating systems cornerstone and affected the associated cornerstone objective of equipment availability. The finding had very low significance because it only affected the mitigating systems cornerstone and did not result in the actual loss of a safety function at the time.

Inspection Report# : [2004013\(pdf\)](#)**G****Significance:** Sep 24, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO FOLLOW INADEQUATE EMERGENCY OPERATING PROCEDURE

A noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Procedures," with two examples, was identified because the licensee failed to implement contingency actions when two circuit breakers failed to operate during recovery operations in Units 1 and 3. Specifically, operators deviated from the Emergency Operating Procedure for Loss of Offsite Power/Loss of Forced Circulation when they initiated maintenance on the two failed breakers instead of performing the contingency actions prescribed by the procedure. In addition, for Unit 1, the procedure was inadequate because it did not list all available contingency actions available to operators for restoring power to the electrical bus.

The finding was greater than minor because it was associated with the equipment performance attributes of the mitigating systems cornerstone and affected the associated cornerstone objective of equipment availability. The finding had very low significance because it only affected the mitigating systems cornerstone and redundancy existed in other electrical buses.

Inspection Report# : [2004013\(pdf\)](#)

G

Significance: Sep 24, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IMPLEMENT CORRECTIVE ACTIONS FOR AUXILIARY FEEDWATER

A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified by the team because the licensee failed to implement timely corrective actions to ensure that the feedwater system was operated in a manner that would minimize the possibility of thermally induced vibration that could affect auxiliary feedwater system operability.

The finding was greater than minor because it was associated with the equipment performance attributes of the mitigating systems cornerstone and affected the associated cornerstone objective of equipment availability. The finding had very low significance because it only affected the mitigating systems cornerstone and because no transient occurred that necessitated implementation of the needed corrective actions.

Inspection Report# : [2004013\(pdf\)](#)

G

Significance: Sep 24, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE EMERGENCY OPERATING PROCEDURE FOR AUXILIARY FEEDWATER OPERATION

A noncited violation of Technical Specification 5.4.1 was identified because the licensee implemented an inadequate Emergency Operating Procedure. Specifically, the procedure failed to provide direction to maintain turbine-driven auxiliary feedwater pumps operable following a main steam isolation signal.

The finding was greater than minor because it was associated with the equipment performance attributes of the mitigating systems cornerstone and affected the associated cornerstone objective of equipment availability. The finding had very low significance because it only affected the mitigating systems cornerstone and because the turbine-driven auxiliary feedwater pumps did not become inoperable.

Inspection Report# : [2004013\(pdf\)](#)

G

Significance: Sep 24, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO MANAGE STATION RISK

A noncited violation of 10 CFR 50.65, "Maintenance Rule," was identified because the licensee failed to perform a risk assessment. Specifically, the licensee inappropriately decided to begin draining the Unit 1 turbine-driven auxiliary feedwater pump steam traps first, without addressing the higher risk profile in Unit 2 which resulted from having an inoperable emergency diesel generator.

The finding was greater than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and affected the cornerstone objective of equipment availability. The finding had very low significance because it only affected the mitigating systems cornerstone and because the turbine-driven auxiliary feedwater pumps were not needed.

Inspection Report# : [2004013\(pdf\)](#)

G

Significance: Sep 24, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY IMPLEMENT LOOP EMERGENCY OPEARTING PROCEDRE

A noncited violation of Technical Specification 5.4.1 was identified because the licensee failed to follow emergency operating procedures. Specifically, the control room operator and an auxiliary operator performed the incorrect steps in Emergency Operating Procedure 40EP-9EO07, "Loss of Offsite Power/Loss of Forced Circulation," Revision 10. The Unit 2, Positive Displacement Charging Pump "E" was temporarily lost due to these human performance errors and resulted in a total loss of Unit 2 charging flow for a short period.

The finding was greater than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and affected the cornerstone objective of equipment availability. The finding had very low significance because it only affected the mitigating systems cornerstone and did not result in the actual loss of a safety function and no significant delays occurred that adversely impacted operator response to the event.

Inspection Report# : [2004013\(pdf\)](#)

Significance: SL-IV Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM A COMPLETE SHUT DOWN COOLING HEAT EXCHANGER TEMPERATURE LOOP CHANNEL CALIBRATION

A Severity Level IV noncited violation of Technical Specification 3.3.11 was identified for the failure to include the resistance temperature detectors in the channel calibration for the shutdown cooling heat exchanger temperature instruments. Specifically, prior to the implementation of Improved Technical Specifications, the licensee did not perform testing of the resistance temperature detectors. Following the implementation of Improved Technical Specifications, the licensee did not perform an in-place qualitative assessment of the resistance temperature detectors' behavior. This issue was entered into the corrective action program as CRDR 280178.

The failure to perform a complete shutdown cooling heat exchanger temperature loop channel calibration is determined to have greater than minor significance because the licensee's failure to report the condition impacted the NRC's ability to perform its regulatory function. Therefore, this finding was considered applicable to traditional enforcement. Although the significance determination process is not designed to assess the significance of violations that potentially impact or impede the regulatory process, the finding can be assessed using the significance determination process. Using the Phase 1 worksheet in Manual Chapter 0609, "Significance Determination Process," this finding is determined to be of very low safety significance because it only affected the mitigating system cornerstone and the resistance temperature detectors were found to be within calibration.

Inspection Report# : [2004003\(pdf\)](#)

G

Significance: Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PERFORM MONTHLY REVIEWS TO ENSURE EXCESS HOURS HAVE NOT BEEN ASSIGNED

The inspectors identified a noncited violation of Technical Specification 5.2.2.d for the failure of authorized individuals to review monthly overtime reports to ensure that excessive hours have not been assigned. Specifically, following the implementation of an electronic reporting system in 2001, the licensee did not ensure that all managers continued to receive and approve the Excess Hours Report.

The finding is greater than minor because if left uncorrected it could become a more significant safety concern in that exceeding the NRC Generic Letter 82-02, "Nuclear Power Plant Staff Working Hours," guidelines for overtime limits is a contributor to worker fatigue. Using the Phase 1 worksheet in Manual Chapter 0609, "Significance Determination Process," this finding is determined to be of very low safety significance because there were no known actual adverse plant or equipment conditions that could be attributed to worker fatigue.

Inspection Report# : [2004003\(pdf\)](#)

G

Significance: Jun 18, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CORRECTLY TRANSLATE DESIGN INFORMATION INTO THE AS-BUILT CONFIGURATION

The team identified a noncited violation for the failure to comply with 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The licensee failed to correctly translate design information into the as-built configuration of the auxiliary feedwater system, in that, 28 feet of exposed auxiliary feedwater minimum flow recirculation line was not protected from a tornado-generated missile for both trains as described in Design Basis Manual, Table 2-1 and Section 10.4.9.1, "Design Basis," of the Final Safety Analysis Report. This issue was entered into the licensee's corrective action program as Condition Report/Deficiency Request 2721947.

In accordance with NRC Inspection Manual 0612, Appendix B, "Issue Screening," this finding is greater than minor because it is associated with the design control attribute of the mitigating systems cornerstone, and affected the cornerstone objective to ensure the capability of systems to respond to initiating events. The inspectors evaluated the issue using the Phase 1 Screening Worksheet for the Initiating Events, Mitigating Systems, and Barriers Cornerstones provided in Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance because: the finding did not represent an actual loss of safety function and because the analyst determined that the system would continue to meet its risk-significant function following a postulated tornado initiating event.

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

G

Significance: Apr 19, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

FAILURE TO PROVIDE ADEQUATE MAINTENANCE PROCEDURE

A noncited violation of Technical Specification 5.4.1.d was identified for an inadequate fire protection program maintenance procedure used to replace underground fire protection post indicator valves. The procedure did not clearly indicate that the preassembled bolts (body to bonnet), as well as other bolts, were to be coated for corrosion protection. This allowed the bolts to corrode, causing failure of the valve and a degradation of the site yard fire main distribution piping and a loss of approximately 278,000 gallons of fire protection water. The issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 2700170.

This finding is greater than minor because it is associated with the degraded fire protection attribute of the mitigating systems cornerstone and

affected the cornerstone objective, which is to ensure the availability, reliability, and capability of systems that mitigate initiating events to prevent reactor accidents. Specifically, the site yard fire main distribution piping was degraded for 45 minutes. Using the Significance Determination Process Phase 1 Worksheet, the finding was determined to have a very low safety significance because it did not involve complete, long-term impairment of the fire protection system. Specifically, the required fire protection water inventory remained above the design reserve level, and the fire main was degraded less than 1 hour.

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

Significance:  Mar 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IDENTIFY DEGRADATION OF POLYETHYLENE CHANNELS ON CLASS 1E BATTERIES

Green. The inspectors identified a noncited violation for the failure to comply with 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Actions. Specifically, the licensee did not identify the degradation of polyethylene insulating channels on Class 1E station batteries. Missing insulating channels could affect the seismic qualification of the batteries.

This finding is greater than minor because it affects the reactor safety mitigating system cornerstone objective to ensure the capability of systems that respond to initiating events. Using the Significance Determination Process Phase 1 Worksheet, the finding was determined to have a very low safety significance, since there was no case where enough insulating channels had slipped to affect the seismic analyses, and the batteries remained in their design configuration.

Inspection Report# : [2004002\(pdf\)](#)

Barrier Integrity

Significance:  Nov 09, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO INCLUDE VENTS AND DRAINS INTO LOCKED VALVE PROGRAM

A noncited violation of Technical Specification Surveillance Requirement 3.6.3.3 was identified for failure to perform the required position verification for vent and drain valves associated with eight safety injection system penetrations per unit. The issue was entered into the licensee's corrective action program as Condition Report/Disposition Request 2753335.

This finding is greater than minor since it is associated with the configuration control attribute of the barrier integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that the containment physical design barrier is preserved to protect the public from radio nuclide releases caused by accidents or events. Using the Phase 1 Worksheet in Manual Chapter 0609, "Significance Determination Process," the finding is determined to have very low safety significance because it only affected the barrier integrity cornerstone, all the valves were found closed, and did not result in an actual open pathway out of the reactor containment.

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

Significance:  Sep 24, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO EVALUATE MAIN GENERATOR EXCITATION LIMITER CIRCUIT PROBLEMS

A noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Procedures," was identified because the licensee failed to follow the procedure for dispositioning a degraded condition for continued use. Specifically, the licensee failed to place a degraded main generator excitation limiter circuit into the work control process via the appropriate procedure to ensure that it was appropriately evaluated and processed.

The finding was greater than minor because it was associated with the human performance attribute of the barrier integrity cornerstone and impacted the cornerstone objective to provide reasonable assurance that physical design barriers, in this case the fuel cladding, protect the public from radio nuclide releases caused by accidents or events.

Inspection Report# : [2004013\(pdf\)](#)

Significance: SL-IV Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

CONTAINMENT PURGE PENETRATION NONCONFORMANCE

A Severity Level IV noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to correct a nonconforming condition in a timely manner. Specifically, since June 2001, the licensee discontinued implementation of required

Technical Specification surveillance testing for the containment purge valves by declaring the valves inoperable and installing blind flanges. This issue was entered into the corrective action program as CRDR 2711167.

The finding is greater than minor because the licensee's failure to submit a license amendment to correct the nonconforming condition impacted the NRC's ability to perform its regulatory function. Therefore, this finding was considered applicable to traditional enforcement. Although the significance determination process is not designed to assess the significance of violations that potentially impact or impede the regulatory process, the finding can be assessed using the significance determination process. Using the Phase 1 worksheet in Manual Chapter 0609, "Significance Determination Process," the finding is determined to have very low safety significance because it only affected the barrier integrity cornerstone and the installation of blind flanges adequately maintained containment integrity.
Inspection Report# : [2004003\(pdf\)](#)

Significance: SL-IV May 21, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROVIDE AN EVALUATION OF A CHANGE TO THE FACILITY AS DESCRIBED IN THE UFSAR, UNDER 10 CFR 50.59 REQUIREMENTS

The team identified a Severity Level IV violation of 10 CFR 50.59 requirements for failing to evaluate a modification to spent fuel storage in the spent fuel pools. The team reviewed CRDR 2524176, regarding the lack of a criticality analysis to support the use of rod capture tubes, which hold individual harvested fuel pins, in the spent fuel rack. The team reviewed the licensee's process of storing individual fuel pins, removed from a parent fuel assembly, and placed in rod capture tubes to be located in guide tubes of another host assembly. This resulted in a component that had nuclear fuel pins, of varying enrichment and depletion, stored as a regular fuel assembly in the spent fuel pools. The team noted that Section 9.1 of the UFSAR specifically described the storage of spent fuel in regions based upon fuel assembly initial enrichment, actual burnup, and actual decay time. The UFSAR does not describe the storage of individual pins in these regions. The licensee previously interpreted this as meaning the UFSAR did not prohibit such storage, and would not require consideration of enrichment, burnup, and decay of individual pins. The licensee failed to provide an evaluation of a change to the facility as described in the UFSAR, under 10 CFR 50.59 requirements. The licensee subsequently performed an evaluation of the criticality under station procedure 72DP-9NF01, "Control of SNM Transfer and Inventory," which was found acceptable.

The issue was determined to be more than minor, through Inspection Manual Chapter 0612, Appendix B, in that it affected the barrier integrity cornerstone attribute of human performance, and could have represented a more significant issue if left uncorrected. In accordance with the NRC Enforcement Manual, violations of 10 CFR 50.59 are not processed through the significance determination process. Therefore, this issue was considered applicable to traditional enforcement. Although the significance determination process is not designed to assess significance of violations that potentially impact or impede the regulatory process, the result of a 10 CFR 50.59 violation can be assessed significance through the significance determination process. The team leader and the Region IV senior reactor analyst discussed the significance of this finding. An SDP Phase 1 screening was performed and the finding was determined to have very low safety significance because there was no actual loss of the barrier integrity function. The licensee entered this issue into its corrective action program as CRDR 2711241.

Inspection Report# : [2004006\(pdf\)](#)

Emergency Preparedness

G

Significance: Dec 15, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE PROCEDURES FOR IMPLEMENTATION OF AN EMERGENCY ACTION LEVEL

The examiners identified a noncited violation of 10 CFR Part 50, Appendix E, IV.B, for inadequate procedures for implementation of an emergency action level. Emergency Action Level 3-13 requires that an Alert be declared if "major damage to irradiated fuel" is accompanied by a "valid high radiation alarm on the associated radiation monitor." However, the phrase "major damage to irradiated fuel" is not defined in any site procedure, nor is it defined, clarified, or addressed through operator training such that operators would know when conditions meet the threshold for declaring an Alert as a result of damage to irradiated fuel. This deficiency was evidenced during the examination by the fact that the examination authors, examination reviewers, and five of the seven license applicants taking the examination did not recognize conditions that warranted declaring an Alert using Emergency Action Level 3-13. The licensee was evaluating a clarifying change to Emergency Action Level 3-13 and its bases documents and has documented this issue in Condition Report/Disposition Request 2761670.

The finding is a performance deficiency in that the licensee failed to identify that Emergency Action Level 3-13 would not be properly implemented without objectively defining the phrase "major damage to irradiated fuel" in either plant procedures or operator training. The finding is more than minor because it affects the Emergency Preparedness Cornerstone of procedural quality in that it could result in a failure to declare an Alert emergency classification when conditions warrant. The finding is of very low safety significance since it was a failure to comply with a regulatory requirement associated with a Risk-Significant Planning Standard that did not result in the loss or degradation of that Risk-Significant Planning Standard function.

Inspection Report# : [2004301\(pdf\)](#)

Significance:  Sep 24, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
TECHNICAL SUPPORT CENTER UNAVAILABLE

A noncited violation of 10 CFR 50.49(q) was identified because the licensee failed to follow the emergency plan when they did not adequately maintain facilities required for emergency response. Specifically, the Technical Support Center (TSC) EDG failed because a test switch was not returned to its proper position following maintenance 6 days prior to the event. As a result, the emergency response organization assembled in the alternate TSC. This resulted in some confusion and posed some unique challenges to the emergency response organization.

The finding was evaluated using Inspection Manual Chapter 0609, "Significance Determination Process," Appendix B, Sheet 2 - Actual Event Implementation Problem. Failure to implement the requirements of the Emergency plan associated with emergency planning standard 8 is considered a failure to comply with planning standard 8 during an actual event implementation. The event was a declared Alert, but was not a failure to implement a risk significant planning standard, as defined in Inspection Manual Chapter MC 0609 Appendix B, §2.0. Therefore, the finding is of very low safety significance.

Inspection Report# : [2004013\(pdf\)](#)

Significance:  Sep 24, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
FAILURE TO PROPERLY IMPLEMENT EMERGENCY PLAN

A noncited violation of 10 CFR 50.49(q) was identified because the licensee failed to follow the emergency plan when they did not ensure that adequate command and control was established during the event. Specifically, the licensee did not follow Emergency Plan Implementing Procedure 1, "Satellite Technical Support Center Actions," which requires that for multiple unit events, the Unit 1 shift manager is responsible for initially classifying and declaring the emergency and assuming the position of the on-shift emergency coordinator. As a result, each of the units' respective shift managers initially assumed the role of emergency coordinator and resulted in notification irregularities to state and local officials.

The finding is more than minor because it is related to the emergency preparedness cornerstone attribute of Response organization performance, and affects the cornerstone objective in that command and control challenges resulting in inaccurate communications to the offsite officials could potentially affect the ability to ensure that adequate measures would be taken to protect the public health and safety.

Inspection Report# : [2004013\(pdf\)](#)

Significance:  Sep 24, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
UNTILMELY AUGMENTATION OF ERGENCY PERSONNEL

A noncited violation of 10 CFR 50.54(q) was identified because the licensee failed to follow the emergency plan. Specifically, the licensee failed to meet minimum staffing goals of Table 1, "Minimum Staffing Requirements for PVNGS for Nuclear Power Plant Emergencies" following the Alert declaration on June 14, 2004.

This finding was evaluated using Inspection Manual Chapter 0609, "Significance Determination Process," Appendix B, Sheet 2 - Actual Event Implementation Problem. Failure to implement the requirements of the Emergency plan associated with emergency planning standard 2 is considered a failure to comply with planning standard 2 during an actual event implementation. The event was a declared Alert, but was not a failure to implement a risk significant planning standard, as defined in Inspection Manual Chapter MC 0609 Appendix B, §2.0. Therefore, the finding is of very low safety significance.

Inspection Report# : [2004013\(pdf\)](#)

Significance:  Mar 31, 2004
Identified By: NRC

Item Type: NCV NonCited Violation
IMPLEMENTATION OF A CHANGE TO TABLE 1 WHICH WAS A DECREASE IN EFFECTIVENESS OF THE EMERGENCY PLAN

Green. On February 16, 2003, the licensee implemented an emergency plan change, which decreased the required number of onshift emergency responders. This change constituted a decrease in effectiveness of the emergency plan because it could have resulted in a dedicated onshift communicator being replaced by a shift technical advisor, with a loss of one onshift position. Implementation of changes to the emergency plan, which constitute a reduction in the effeciveness of the plan without prior NRC approval, was a noncited violation of 10 CFR 50.54(q).

The finding was evaluated using NUREG-1600, "General Statement of Policy and Procedure for NRC Enforcement Actions," Section IV, because licensee reductions in the effectiveness of its emergency plan impact the regulatory process. The finding had greater than minor significance because reducing the required number of onshift emergency responders had the potential to impact the ability to perform all necessary emergency functions. The finding was determined to be a noncited Severity Level IV violation because the emergency plan change constituted a failure to implement a regulatory requirement, but did not constitute a failure to meet an emergency planning standard as defined

by 10 CFR 50.47(b) because actual staffing levels remained above the emergency plan minimum. This finding has been entered into the licensee's corrective action program as Condition Report Disposition Request 2670023.

Inspection Report# : [2004002\(pdf\)](#)

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

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

Miscellaneous

Significance: N/A May 21, 2004

Identified By: NRC

Item Type: FIN Finding

IDENTIFICATION AND RESOLUTION OF PROBLEMS

The team concluded that the licensee was generally effective at identifying problems and processing them through the corrective action program. The licensee effectively prioritized and evaluated issues with a few exceptions. The team identified examples where the licensee had not evaluated identified issues for proper compliance with 10 CFR 50.59 requirements. Additionally, in some cases, corrective actions were not timely or fully documented. Licensee audits and assessments were found to be effective except for one example involving maintenance rule application to radiation monitors. On the basis of interviews conducted during this inspection, workers at the site felt free to input safety findings into the corrective action program.

Inspection Report# : [2004006\(pdf\)](#)

Last modified : March 09, 2005