Salem 1
3Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Mar 29, 2003
Identified By: Self Disclosing
Item Type: FIN Finding
SALEM UNITS 1 AND 2 CONTROL AIR TRANSIENT
A self-revealing finding occurred when Salem Units 1 and 2 experienced a control air transient. Equipment anomalies during the transient revealed a valve configuration problem, an incomplete control air preventive maintenance item, and inadequate corrective action for a significant air leak.

This finding was not a violation of NRC requirements, in that the performance deficiencies occurred on non-safety related systems. The finding had an actual impact on plant stability and operator actions were necessary to reseat a reactor coolant system letdown line relief valve. This finding screened to Green in phase 1 of the SDP, because mitigation equipment was not affected by the control air transient.
Inspection Report# : 2003003*(pdf)*

Significance: N/A Nov 22, 2002
Identified By: NRC
Item Type: FIN Finding
SUMMARY PARAGRAPH FOR SUPPLEMENTAL INSPECTION ON WHITE UNPLANNED POWER TRANSIENTS PI
The U.S. Nuclear Regulatory Commission (NRC) performed this supplemental inspection to assess PSEG Nuclear's evaluation associated with the white performance indicator at Salem Unit 1. During this supplemental inspection, performed in accordance with Inspection Procedure 95001, the inspector determined that PSEG Nuclear performed comprehensive evaluations to determine the causes for each of the down-power transients. PSEG Nuclear completed an evaluation of all the transients related to the "white" performance indicator (PI) and identified several influencing factors which contributed to the events. They included timeliness of corrective actions, preventative maintenance program issues, human performance issues and other programmatic problems that lead to a reactive vs. pro-active response. In addition, the inspector found several examples in which the corrective action program did not determine all the germane factors related to the transients.

Given PSEG Nuclear's acceptable performance related to the final resolution of each of the issues and implementing several programs to address the underlying causes of the events which caused the seven transients associated with the whtie performance indicator, the "white" PI will only be considered in assessing plant performance until the transient trend crosses the green level threshold, in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program." Implementation of the corrective actions will be reviewed during the next "Problem Identification and Resolution" Baseline Inspection per Inspection Procedure 71152.
Inspection Report# : 2002008*(pdf)*

Mitigating Systems

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY PERFORM MAINTENANCE ON 13 AUXILIARY FEEDWATER PUMP
A self-revealing finding made apparent a non-cited violation of Technical Specification (TS) 6.8.1 for failure to properly plan and perform maintenance in accordance with written procedures for a turbine driven auxiliary feedwater pump (13 AFWP) steam admission valve (1MS132). 1MS132 had been reassembled without adequate work instructions to ensure the actuator to valve stem coupling remained tight. The loose stem coupling was the root cause of an AFW pump trip during surveillance testing.

This finding is greater than minor, because it affected the Mitigating System Cornerstone objective of equipment reliability, in that the erratic opening of 1MS132 caused the 13 AFWP to trip during surveillance testing one out of four times. The finding is of very low safety significance, because operators had been trained and adequate procedures existed to provide assurance of recovering a tripped turbine driven auxiliary feedwater pump. Additionally, during recovery the steam admission valve would not need to stroke open, as it would be established full open when operators controlled steam admission with the turbine trip valve.
Inspection Report# : 2003007*(pdf)*

Significance: G Sep 17, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROMPTLY IDENTIFY AND CORRECT AN ISSUE ADVERSE TO QUALITY ASSOCIATED WITH THE UNIT 1 FUEL HANDLING BUILDING
A self-revealing violation of 10 CFR 50, Appendix B, Criterion XVI, was identified involving failure to promptly detect and correct a condition adverse to quality involving the undetected accumulation of borated, contaminated water behind Unit 1 fuel handling building (FHB) walls. Specifically, water leaked from the Unit 1 spent fuel pool (SFP) for an undetermined period of time through December 2002 and accumulated between the Unit 1 SFP liner and the Unit 1 FHB walls. The water subsequently leaked through the building walls presenting the potential for undetected releases of contaminated water to the Unrestricted Area and adverse effects on the FHB structure.

This finding was not suitable for SDP evaluation but was reviewed by NRC management and determined to be a violation of very low safety significance (Green). Specifically, the finding was more than minor because, if left uncorrected, the leakage would become a more significant safety concern if the condition eventually resulted in an unmonitored release to the environment or adversely affected the FHB. This finding was not greater than very low safety significance because there was no indication that Unit 1 FHB leakage had resulted in any radiological exposure to workers or members of the public, and there was no evidence that the FHB structure had been adversely affected such that it would not meet its design function.
Inspection Report# : 2003006*(pdf)*

Significance: G Jun 28, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to timely correct a service water valve (12SW380) actuator air leak.
The inspectors identified a non-violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to timely correct a service water valve (12SW380) actuator air leak. The source of the air leak, which was a symptom of the valve failure mechanism, was not fully identified and the deficient valve failed one month later during a routine plant evolution. The failed valve rendered the 12A component cooling water heat exchanger inoperable.

This finding is greater than minor because it had an actual impact on the component cooling system. The finding is of very low safety significance because it did not reduce the number of operable component cooling water heat exchangers below minimum technical specification requirements for the current river water temperature.
Inspection Report# : 2003005*(pdf)*

Significance: G Jun 28, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
FAILURE TO TIMELY IDENTIFY A CONFIGURATION CONTROL ERROR THAT DEGRADED AN AUXILIARY FEEDWATER FLOW CONTROL VALVE
A self-revealing finding made apparent a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to timely identify and correct an auxiliary feedwater flow control valve (12AF11) deficient condition. Control air to the valve actuator was throttled from February 28, 2003, to April 9, 2003, and affected the valve stroke time. The configuration control error occurred when maintenance activities were not properly restored.

This finding is greater than minor because it had an impact on the auxiliary feedwater system and increased the time required to isolate the 12 steam generator for tube rupture mitigation. The finding is of very low safety significance because remote operation of 12AF11 remained available and the increase in stroke time was not significant, about a 12 second increase.
Inspection Report# : 2003005*(pdf)*

Significance: G Jun 28, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
INADEQUATE CORRECTIVE ACTIONS TO PREVENT RECURRENCE OF A SERVICE WATER MOTOR-OPERATED VALVE (12SW17) FAILURE
A self-revealing finding identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to prevent recurrence of a service water valve, 12SW17, motor operator failure. Inadequate maintenance practices during an initial repair of 12SW17 introduced deficient torque switch conditions that caused the 12SW17 to again fail requiring repeat corrective action. 12SW17 is a cross-tie valve, normally open, between independent service water loops.

This finding is greater than minor because it had an actual impact on the ability to maintain independent service water system trains and reduced service water bay flooding mitigation capabilities. The finding is of very low safety significance because it did not render either service water loop inoperable.
Inspection Report# : 2003005*(pdf)*

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY PERFORM MAINTENANCE ON COMPONENT COOLING CROSS-CONNECT VALVE, 1CC17
The inspectors identified a non-cited violation of technical specification 6.8.1 for failure to follow maintenance procedures and adequately lubricate a component cooling (CC) system train cross-connect motor operated valve (1CC17). Maintenance technicians inappropriately used another maintenance procedure not directed in the work order

instructions that allowed optional valve stem lubrication. The intended maintenance procedure mandated complete stem cleaning and new lubrication. Eleven months later, 1CC17, failed to close during surveillance testing because of aged and hardened valve stem grease.

This finding is greater than minor because it had an actual impact on the component cooling system and challenged the ability to establish independent CC system trains. The finding is of very low safety significance because redundant MOVs were available to establish independent trains.
Inspection Report# : 2003005*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IDENTIFY EMERGENCY DIESEL GENERATOR ROOM ROOF LEAKS
The inspectors identified that PSEG did not initiate corrective action to ensure that the emergency diesel generators (EDGs) would remain unaffected by apparent roof leaks.

This NCV of 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion XVI, "Corrective Action," is greater than minor, because it affected the mitigating systems cornerstone of equipment reliability and unavailability. The 1C EDG required corrective action to dry wetted safety-related electrical terminals prior to its operation. This finding was of very low significance, because the 1C EDG condition existed for less than the TS allowed outage time.
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 29, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY EVALUATE AUXILIARY FEEDWATER PUMP SKID
The inspectors identified that temporary modifications to the 22 auxiliary feedwater (AFW) pump and the 13 AFW pump skids were not properly evaluated.

This NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control" was greater than minor, because it affected the mitigating system cornerstone and the reliability of two AFW pumps. This finding was determined to be of very low safety significance, because pump shaft leakoff conditions were such that the unauthorized modifications had not impacted pump operation.
Inspection Report# : 2003003*(pdf)*

Significance: G Mar 29, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
EMERGENCY DIESEL GENERATOR DEFICIENT CORRECTIVE ACTIONS
A self-revealing finding was identified when the 1B emergency diesel generator (EDG) tripped during post-maintenance testing (PMT). The PMT was for separate test reasons and fortuitously revealed the EDG deficiency. The EDG deficiency involved a known electrical connector problem and inadequate interim corrective actions.

This NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," is greater than minor, because it affected the mitigating systems cornerstone of equipment reliability. This finding was of very low significance, because the inadequate interim corrective actions did not cause any EDG to be inoperable for greater than the TS allowed outage time.

Inspection Report# : 2003003*(pdf)*

Significance: G Mar 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IMPLEMENT CORRECTIVE ACTIONS
The team identified a non-cited violation involving two examples where PSEG failed to correct conditions adverse to quality as required by 10 CFR 50, Appendix B Criterion XVI, Corrective Actions. Specifically, PSEG failed to evaluate and correct an adverse condition involving the protection of wires located inside of control room panels from an over-current condition, and also failed to correct an adverse condition involving a degraded component cooling water system pipe support. These findings were evaluated using the Phase 1 worksheet of the significance determination process and found to be of very low significance (Green) since they did not result in the actual loss of a mitigating system.
Inspection Report# : 2003004*(pdf)*

Significance: G Jan 30, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IMPLEMENT CORRECTIVE ACTIONS FOR REPETITIVE FUEL OIL LEAKS ON EMERGENCY DIESEL GENERATORS
A non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to identify the cause and prevent recurrence of emergency diesel generator (EDG) injection pump fitting fuel oil leaks. This resulted in repetitive EDG outages to repair fuel oil leaks.

This finding is greater than minor because it adversely affected the equipment performance attribute of the mitigating systems cornerstone objective, in that the necessary repair activities for these fuel oil leaks resulted in an increased unavailability for the EDGs. The finding was of very low safety significance because the fuel oil leaks did not result in an actual loss of safety function for the EDGs.

Inspection Report# : 2002010*(pdf)*

Significance: W Jan 30, 2003
Identified By: Self Disclosing
Item Type: VIO Violation
INEFFECTIVE IMPLEMENTATION OF CORRECTIVE ACTIONS FAILED TO PREVENT A RECURRENCE OF EMERGENCY DIESEL GENERATOR TURBOCHARGER FAILURE
Failure to identify the cause and prevent recurrence of the emergency diesel generator (EDG) turbocharger failures was a performance deficiency. This finding is greater than minor because it adversely affected the equipment performance attribute of the mitigating systems cornerstone objective, in that, the 1C EDG was incapable of performing its safety function for a period of time in excess of its technical specification allowed outage time. This finding was determined to have potential safety significance greater than very low because the likelihood of core damage due to a loss of AC power was significantly increased while the 1C EDG was not availabe to mitigate a loss of offsite power event. This finding was unresolved pending completion of a significance determination.

On May 1, 2003, the finding was determined to be a violation of 10 CFR 50, Appendix B, Criterion XVI. The significance of the finding was also determined to be White. The Notice of Violation and Final Significance

Determination were provided in the NRC letter dated May 1.
Inspection Report# : 2002010*(pdf)*

Significance: G Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY TEST THE 12 COMPONENT COOLING HEAT EXCHANGER
A non-cited violation of 10 CFR 50, Appendix B, Criterion VI, "Test Controls," was identified for failure to properly establish the component cooling (CC) flowrate through the 12 CC heat exchanger during thermal performance testing.

This finding is greater than minor because it affected the Mitigating System Cornerstone of equipment reliability, in that the failure to maintain adequate test controls could allow a degraded heat exchanger to go undetected. This finding was of very low significance because the CC heat exchangers remained operable when the flow measurement error was considered in the test evaluation.
Inspection Report# : 2002009*(pdf)*

Significance: G Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
PSEG FAILED TO MAINTAIN COMPLETE AND ADEQUATE MAINTENANCE RECORDS
A non-cited violation of Technical Specification 6.10.1.b was identified for failure to maintain quality records of principal maintenance activities performed on the 1PR2 valve and on the 22 containment fan cooling unit. This finding was similar to a non-cited violation identified in Inspection Report 2001-12 and indicated that previous actions to correct this problem had not been effective.

This finding was greater than minor since it impacted the inspectors ability to independently assess the condition of these components following maintenance activities. This finding was of very low significance because the components performed properly during the post-maintenance testing.
Inspection Report# : 2002009*(pdf)*

Significance: G Dec 28, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
SHUTDOWN COOLING LOOP INOPERABLE AND LESS THAN 3 FEET OF WATER ABOVE THE FUEL
A non-cited violation of Technical Specification 6.8.1 was identified for failure to establish and implement adequate procedures prior to the removal of the 11 CC pump room cooler fan from service for maintenance.

This finding was greater than minor since it resulted in a condition where the two operable residual heat removal systems were not available when the reactor cavity water level was less than twenty-three feet above the top of the fuel as required by TS 3.9.8.2. The finding was evaluated by Regional and NRR Senior Reactor Analysts and determined to be of very low significance since the 11 CC pump remained functional during the period of time when the fan was out of service without the necessary compensatory measures.
Inspection Report# : 2002009*(pdf)*

Significance: G Dec 28, 2002

Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY EVALUATE A TEMPORARY INSTALLATION TO THE 11 SERVICE WATER HEADER
A non-cited violation of 10 CFR 50, Appendix B, Criterion III, Design Controls was identified for the failure to properly evaluate a temporary hose connection to an operable service water header. This finding was greater than minor since it challenged the operability of the only operable service water header while reactor de-fueling operations were in-progress.

This finding was determined to be of very low significance since the service water header remained functional while the hose was attached.
Inspection Report# : 2002009*(pdf)*

Barrier Integrity

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
INADEQUATE IST PROGRAM IMPLEMENTATION FOR CFCU SW VALVE
The inspectors identified a non-cited violation of technical specification 4.0.5 for failure to properly implement the ASME inservice testing program for the 15 containment fan coil unit (CFCU) outlet service water valve, 15SW72. PSEG did not establish appropriate and accurate stroke time reference values for 15SW72. Operability determinations and work management decisions were made based on inaccurate reference values.

This finding is greater than minor because it affected the availability of the 15 CFCU. The finding is of very low safety significance because the physical integrity of the reactor containment was not affected and other CFCUs were maintained operable consistent with technical specification requirements.
Inspection Report# : 2003005*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Miscellaneous

Significance: N/A Mar 28, 2003
Identified By: NRC
Item Type: FIN Finding
PI&R BIENNIAL SUMMARY CONCLUSION
The team determined that PSEG was generally effective at identifying discrepant conditions and entering them into the corrective action system. However, the findings identified by this team supported the conclusion in the Annual Assessment Letter (NRC Inspection Report 50-272, 311/2003-01) of the existence of a substantive cross cutting issue in the area of problem identification and resolution. The team identified four examples where conditions adverse to quality were not entered into the corrective action system. The team determined that PSEG was generally effective at classifying and performing operability evaluations for discrepant conditions, however, some examples were noted where problem evaluations did not contain sufficient detail to support the conclusions. The team identified a finding with two examples where PSEG failed to correct conditions adverse to quality. The team noted that PSEG performed a root cause evaluation to indentify areas to improve the corrective action program. The team was not able to assess the effectiveness of this effort since the corrective actions had not been completed. On the basis of interviews conducted during the inspection, workers at the site felt free to input safety findings into the corrective action program.
Inspection Report# : 2003004*(pdf)*

Last modified : December 01, 2003