Salem 1
3Q/2004 Plant Inspection Findings

Initiating Events

Significance: G Sep 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
UNTIMELY PROBLEM RESOLUTION FOR 125VD.C. BATTERY CHARGER FAILURES
A self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was made apparent when the 1A1 125Vdc battery charger malfunctioned to a reduced charging capacity. The 1C1 and 2C1 battery chargers failed about three months prior, but corrective actions were not implemented to eliminate the identified defective condition for all battery chargers of identical design and like vintage.

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. This finding was more than minor because it was associated with the equipment performance attribute, and it affected the mitigating systems cornerstone objective to ensure the capability of systems that respond to initiating events. The inspectors determined that the finding was of very low safety significance using the Phase 1 SDP because the finding was not a design or qualification deficiency; it did not represent an actual loss of safety function of a single train for greater than the technical specification allowed outage time; and it did not screen as potentially risk significant for externally initiated core damage accident sequences.
Inspection Report# : 2004004*(pdf)*

Significance: G Dec 16, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IMPLEMENT ADEQUATE DESIGN CONTROL MEASURES
The team identified a violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for design control inadequacies during plant modifications, setpoint changes and revisions of calculations associated with the 4160 volt electrical power system. These electrical system design deficiencies caused the two offsite power sources not to be independent of each other as required by 10 CFR 50, Appendix A, Criterion 17, Electric Power Systems.

The finding was more than minor because it affected the design control attribute of the Initiating Events Cornerstone objective and resulted in an increased likelihood of a loss of offsite power (LOOP) event. The finding was determined to be of very low safety significance (Green) based on a the results of a phase 3 SDP analysis which evaluated the increase in core damage frequency (CDF) due to the increased likelihood of a LOOP caused by the design deficiencies.
Inspection Report# : 2003008*(pdf)*

Significance: G Dec 16, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IMPLEMENT ADEQUATE CORRECTIVE ACTIONS
The team identified a violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for the failure of the licensee to implement adequate corrective actions to address design issues identified following the July 29, 2003, loss of offsite power event. When performing an operability evaluation to support plant restart, the licensee failed to identify that the lower operating voltage limit for the 4.16 kV buses needed to be increased to prevent recurrence of a similar event. The plant was restarted and operated from August 4 to August 22, 2003, until the issue was identified by the NRC and corrected by the licensee.

The finding was more than minor because it affected the design control attribute of the Initiating Events Cornerstone objective and resulted in an increased likelihood of a loss of offsite power event (LOOP). The finding was determined to be of very low safety significance (Green) based on a the results of a phase 3 SDP analysis which evaluated the increase in core damage frequency (CDF) due to the increased likelihood of a LOOP caused by the failure to take appropriate corrective actions prior to plant restart.
Inspection Report# : 2003008*(pdf)*

Mitigating Systems

Significance: G Sep 30, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
INCORRECT ASSEMBLY OF 1SW26
A self-revealing finding was identified regarding inadequate procedure guidance and deficient maintenance practices when the Unit 1 turbine building service water isolation valve failed to close on June 2, 2004. The finding was determined to be a non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings."

Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements. The finding was more than minor, because it was associated with the equipment performance attribute, and it affected the Initiating Events, Mitigating Systems, and Barrier Integrity Cornerstone objectives. The finding was determined to be of very low safety significance based upon a SDP Phase 3 analysis.
Inspection Report# : 2004004*(pdf)*

Significance: G Jun 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
INADEQUATE FME FOULS 12A AND 12B COMPONENT COOLING HEAT EXCHANGERS
A self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was made apparent when foreign material, plywood and duct tape, was identified within the 12A and 12B component cooling heat exchanger service water inlet boxes.

This finding was more than minor because it was associated with the equipment performance attribute, and it affected the mitigating systems cornerstone objective. The inspectors determined that the finding was of very low safety significance (Green) using the Phase 1 SDP because the as-found heat exchanger performance data demonstrated that the heat exchangers were marginally impacted by the foreign material; and thus, the foreign material did not increase the likelihood of a loss of component cooling water event or result in the loss of safety function of the component cooling heat exchangers in any internally or externally initiated core damage accident sequences.
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
INCORRECT ASSEMBLY OF 1MS132
A self-revealing non-cited violation of Technical Specification (TS) 6.8.1.a was made apparent for failure to properly perform maintenance in accordance with written procedures for the 13 turbine-driven auxiliary feedwater pump steam admission valve (1MS132). Maintenance technicians added lubricant, not specified by work instructions, to the valve and actuator stems which prevented the stem block from achieving adequate coupling with the stems.

This issue was more than minor because it was associated with the equipment performance attribute, and it affected the Mitigating Cornerstone objective. The inspectors determined that the finding was of very low safety significance (Green) using the Phase 1 SDP because the finding was not a design or qualification deficiency; it did not represent an actual loss of safety function of a single train for greater than the TS allowed outage time; and it did not screen as potentially risk significant for externally initiated core damage accident sequences.
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
DESIGN MODIFICATION RESULTING IN FAILURE OF 12SW17 TO OPEN
A self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was made apparent for failure to incorporate adequate instructions to adjust the open torque switch bypass setting on the 12 nuclear service water header crosstie valve, 12SW17, into the design change package which modified the valve from a limit seated, soft seated butterfly valve to a torque seated, hard seated butterfly valve.

This issue was more than minor because it was associated with the equipment performance attribute, and it affected the Mitigating Cornerstone objective. The inspectors determined that the finding was of very low safety significance (Green) using the Phase 1 SDP because the finding was a design deficiency that resulted in a loss of function of a single train for less than the TS allowed outage time; and it did not screen as potentially risk significant for externally initiated core damage accident sequences.
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004

Identified By: Self Disclosing
Item Type: NCV NonCited Violation
INADEQUATE 13 AUXILIARY FEEDWATER PUMP INSPECTION INSTRUCTIONS
A self-revealing non-cited violation of Technical Specification 6.8.1.a was made apparent for failure to establish maintenance instructions appropriate to the circumstances for preventive maintenance performed on the 13 turbine-driven auxiliary feedwater pump overspeed trip mechanism. Consequently, PSEG personnel did not identify wear on the overspeed trip device tappet nut which resulted in the 13 turbine-driven auxiliary feedwater pump tripping during surveillance testing on March 30, 2004.

This issue was more than minor because it was associated with the equipment performance attribute, and it affected the Mitigating Systems Cornerstone objective. The inspectors determined that the finding was of very low safety significance (Green) using the Phase 1 SDP because the finding was not a design or qualification deficiency; it did not represent an actual loss of safety function of a single train for greater than the TS allowed outage time; and it did not screen as potentially risk significant for externally initiated core damage accident sequences.
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
FAILURE OF 25 TRAVELING WATER SCREEN DUE TO INADEQUATE LUBRICATION
A self-revealing non-cited violation of TS 6.8.1.a was identified for failure to establish maintenance instructions appropriate to the circumstances for preventive maintenance performed on the 25 service water traveling water screen (TWS) which resulted in the subsequent failure of the 25 TWS due to inadequate lubrication of the head shaft bearing.

This finding was more than minor because it was associated with the equipment performance attribute, and it affected the Initiating Event and Mitigating System Cornerstone objectives. In accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the Region I SRA conducted a Phase 3 SDP analysis of the significance of the performance deficiency and determined the finding was of very low safety significance (Green). In this analysis, the SRA assumed that the 25 TWS was out-of-service for 177 hours and that the loss of service water (LOSW) initiating event frequency increased during this time because of lost redundancy in the service water trains as a result of the performance deficiency. The SRA determined that the increase in core damage frequency due to internally initiated events was in the low E-8 range.
Inspection Report# : 2004003*(pdf)*

Significance: G Jun 24, 2004
Identified By: NRC
Item Type: FIN Finding
FAILURE TO CONDUCT SALEM SIMULATOR TESTING IN ACCORDANCE WITH ANSI/ANS 3.5-1993
The inspectors identified that simulator performance testing on the Salem simulator did not meet the standards as specified in ANSI/ANS 3.5-1993 in that: (1) "best estimate" data for the simulator testing was not used; (2) some (4 of the 11 required) annual simulator transient tests were not performed and; (3) simulator test documentation did not include an evaluation and validation of test results.

This finding is more than minor because it affects the human performance (human error) attribute of the mitigating systems cornerstone. Improperly conducted simulator testing brings simulator fidelity into question. The finding is of very low safety significance (Green) because the discrepancy did not have an adverse impact on operator actions such that safety related equipment was made inoperable during normal operations or in response to a plant transient.
Inspection Report# : 2004007*(pdf)*

Significance: G Mar 12, 2004
Identified By: NRC
Item Type: FIN Finding
INEFFECTIVE CONTROL AIR QUALITY TESTING
A finding of very low safety significance was identified in that the Control Air (CA) quality test program was inadequate. The test program did not verify the quality of air meets standards specified in ANSI/ISA S7.3-1975, Quality Standard for Instrument Air, as delivered to safety-related air loads.

This finding is greater than minor because it is associated with the Procedure Quality attribute for the CA mitigating system function and, if left uncorrected, could become a more significant safety concern. The finding is of very low safety significance because it did not render the CA system inoperable and because of the CA system redundancy
Inspection Report# : 2004006*(pdf)*

Significance: G Mar 12, 2004
Identified By: NRC
Item Type: NCV NonCited Violation

INEFFECTIVE DESIGN CONTROL ASSOCIATED WITH SERVICE WATER DESIGN CHANGE AND INEFFECTIVE CORRECTIVE ACTIONS RELATIVE TO SW HIGH PRESSURE CONDITIONS
A finding of very low safety significance (Green), that is also a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, was identified regarding an inadequate design analysis for a service water system modification performed on both units. The modification had changed the service water recirculation valve operating characteristics and installed orifices in the line without adequately evaluating the effect of an increase in system pressure, impact on pump margin to minimum flow requirements during transients, and impact to the service water high pressure alarm design function.

The finding is greater than minor because it was associated with the mitigating system cornerstone attributes of design control and equipment performance and affected the capability of the system to ensure service water pressure would be maintained within previously evaluated design parameters. Based on a review of PSE&G's analyses of the issue, the team concluded that the finding was a design deficiency which was confirmed not to result in the loss of any mitigating system function. Therefore, in accordance with the SDP Phase I screening worksheet, the issue was determined to be of very low safety significance (Green).

The team identified that a contributing cause of the finding was related to the cross-cutting area of Problem Identification and Resolution. PSEG had not fully evaluated and corrected this issue after several previous opportunities had existed to do so.
Inspection Report# : 2004006*(pdf)*

Significance: G Dec 27, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
FAILURE TO MAINTAIN THE CONTROL AIR SYSTEM CLEAN
In February 2003, PSEG identified equipment failures related to corrosion products in the control air system. On October 22, 2003 a Unit 2 chilled water compressor (23 chiller) tripped, because its control air was restricted by corrosion products. This self-revealing finding represented an NCV for ineffective corrective actions.

This finding is greater than minor, because it affected the chilled water system availability, an equipment performance attribute of the Mitigating Systems Cornerstone. The finding is of very low safety significance, because the 23 chiller inoperability duration was short, about an hour, and one train of control room emergency air conditioning remained operable.
Inspection Report# : 2003009*(pdf)*

Significance: G Dec 27, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
UNTIMELY SERVICE WATER PUMP STRAINER CORRECTIVE ACTIONS
Ineffective corrective actions existed following a service water pump strainer (13 SWP strainer) trip in February. An established troubleshooting plan, developed as a corrective action from previous inadequacies in identifying strainer problems, was not used, and the cause of the strainer tripping was not fully identified. The 13 SWP strainer tripped again in April and required disassembly in May to remove metal debris that had ultimately bound strainer rotation. This self-revealing finding represented an NCV for ineffective corrective actions.

This issue was more than minor, because it was associated with the equipment performance attribute of the Initiating Events and Mitigating Systems Cornerstones. This finding was evaluated by a Phase 3 significance determination process and determined to be of very low safety significance.
Inspection Report# : 2003009*(pdf)*

Significance: G Dec 16, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY TRANSLATE DESIGN INTO PLANT PROCEDURES
The team identified a violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for failure of the licensee to translate design change information into plant procedures. Following the installation of a plant modification to provide a cross connect between the Unit 1 and 2 chemical and volume control systems (CVCS), instructions for utilizing the cross connect feature were not included at the appropriate steps in the associated procedures.

The finding was more than minor because it affected the design control attribute of the Mitigating Systems Cornerstone objective. The issue was not a design or qualification deficiency that the licensee had evaluated in accordance with GL 91-18, and was determined to be of very low safety significance (Green) because it did not result in an actual loss of safety function of a single train for internal or external event initiated core damage sequences.
Inspection Report# : 2003008*(pdf)*

Barrier Integrity

Significance: G Mar 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
FAILURE TO ADEQUATELY EVALUATE A CONTAINMENT FAN COOLER UNIT SERVICE WATER VALVE ANOMALY
Ineffective problem evaluation, regarding a significant change in stroke time test results for a containment fan cooler unit flow control valve (12SW65), resulted in a valve disc stem severing and was undiscovered until intrusive preventative maintenance occurred. This self-revealing finding represented an NCV for inadequate corrective actions.

This finding is greater than minor, because it affected the Barrier Integrity Cornerstone objective of assuring that physical design barriers protect the public from radio nuclide releases caused by accidents or events. This finding was evaluated by a senior reactor analyst using the containment integrity significance determination process and determined to be of very low safety significance.
Inspection Report# : 2004002*(pdf)*

Significance: G Mar 30, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
AUXILIARY BUILDING VENTILATION NOT PROMPTLY RESTORED
An auxiliary building ventilation (ABV) deficiency was not properly evaluated and corrected, such that a Technical Specification (TS) prohibited condition occurred. Control room operators were made aware that no air flow existed in a portion of the Unit 1 ABV exhaust ducts, yet did not recognize the TS applicability.

This finding is greater than minor, because it affected the Barrier Integrity Cornerstone objective of assuring that physical design barriers protect the public from radio nuclide releases caused by accidents or events. The finding is of very low safety significance, because the deficient air flow existed in only a portion of the auxiliary building and only represented a degradation of the radiological barrier function of ABV.
Inspection Report# : 2004002*(pdf)*

Significance: G Mar 12, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
CALCULATIONS OF CONTROL AIR ACCUMULATOR VOLUME WERE NON-CONSERVATIVE WITH RESPECT TO THE LTOP PORV ACCUMULATOR DESIGN BASES EVALUATION
The inspectors identified a finding of very low safety significance (Green), that is also a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, Design Control. Specifically, design calculations performed to verify adequate accumulator air pressure for Low Temperature Overpressure (LTOP) conditions and acceptable system leakage rates used incorrect design inputs. These non-conservative calculations were referenced during future system evaluations and also used as the basis for operability determinations and alarm set points.

This finding is greater than minor because it was associated with the design control attribute for the power operated relief valve (PORV) mitigating system function. The design calculations formed the bases for subsequent non-conservative operability reviews which affected the objective of adequately ensuring the capability of the PORV accumulators. Because the LTOP condition is only of concern during periods where the reactor is in cold shutdown, the inspectors evaluated the finding using Appendix G, Shutdown Operations to NRC IMC 0609, Significance Determination Process (SDP). The team concluded that this issue was of very low safety significance (Green) since the function had always been maintained.

The inspectors identified that a contributing cause of the finding was related to the cross-cutting area of Problem Identification and Resolution in that Design Engineering personnel had failed to identify and correct errors and discrepancies between design calculations of record.
Inspection Report# : 2004006*(pdf)*

Significance: G Dec 27, 2003
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
INADEQUATE FOREIGN MATERIAL FAILS A STEAM GENERATOR FEED REGULATING VALVE
Foreign material, a 3" long stud, jammed a feedwater regulating valve (FRV) in its full open position, which rendered the FRV inoperable for its containment isolation function, and caused a reactor shutdown. This self-revealing finding represented an NCV of procedures for foreign material exclusion.

This finding is greater than minor, because it had an actual impact of jamming an FRV open, which is designed to close on a safety injection signal and minimize the energy release to containment on a main steam line break. The finding is of very low safety significance, because a redundant valve and a main feed pump trip feature were unaffected.

Inspection Report# : 2003009*(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Last modified : December 29, 2004