San Onofre 3
3Q/2005 Plant Inspection Findings

Initiating Events

Significance: G Aug 02, 2005
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Surveillance Procedure Results in Inadvertent Reactivity Addition
A self-revealing, noncited violation of Technical Specification 5.5.1.1 was identified for the failure to follow procedural requirements during surveillance testing of the Unit 3 steam generator blowdown processing system. This failure resulted in the blowdown flow control valve going to the full open position and an inadvertent reactivity addition to Unit 3. The finding had crosscutting aspects in the area of human performance because the failure of instrumentation and control technicians to follow the procedure directly contributed to the cause of the finding.

The finding was determined to be more than minor because it was associated with the human performance attribute of the initiating events cornerstone. It also affected the cornerstone objective of limiting the likelihood of events that upset plant stability. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.
Inspection Report# : 2005004*(pdf)*

Significance: G Jun 26, 2005
Identified By: NRC
Item Type: FIN Finding
FAILURE TO IDENTIFY HYDRAULIC LEAK ON MAIN FEEDWATER BLOCK VALVE 3HV4051
The inspectors identified a Green finding for the failure to develop an adequate monitoring plan to timely identify a hydraulic leak on Main Feedwater Block Valve 3HV4051 on April 20, 2005. Specifically, Operations personnel were unaware that the leak existed until notified by the inspectors. This issue involved human performance crosscutting aspects associated with operators failing to identify the leak on shiftly rounds. This issue was entered into the licensee's corrective action program as Action Requests 050401214 and 050401222.

The finding is determined to be greater than minor because it was associated with the human performance attribute of the initiating events cornerstone and affects the cornerstone objective of limiting the likelihood of those events that upset plant stability. Furthermore, if left uncorrected, the finding would become a more significant safety concern in that it would continue to challenge the licensee to promptly identify a hydraulic leak on Valve 3HV4051 in order to prevent a plant transient. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding is determined to have very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions were not available.
Inspection Report# : 2005003*(pdf)*

Significance: G Dec 31, 2004
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Procedure Results in an Inadvertent Crosstie of RWST to Spent Fuel Pool Cooling System
A self-revealing, noncited violation of Technical Specification 5.5.1.1 was identified for the implementation of inadequate procedures which led to the inadvertent crosstie of the Unit 3 Train B refueling water storage tank (RWST) to the Unit 3 spent fuel pool cooling system on November 8, 2004. The two systems were crosstied for approximately 45 minutes which resulted in approximately 6000 gallons of borated water being transferred from the Train B RWST to the Unit 3 spent fuel pool. The Unit 3 spent fuel pool overflowed to the Unit 3 fuel handling building sump, causing the excess water to back-up into the fuel handling building through its floor drains.

The finding was determined to be more than minor because it was associated with the procedure quality attribute of the initiating events cornerstone. It also affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown conditions. 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. However, this finding was determined to be of very low safety significance by management review because spent fuel pool cooling and the fuel handling building ventilation system were still available and no personnel contamination events occurred. The finding had crosscutting aspects in the area of human performance because the inadequate procedures directly contributed to the cause of the finding.
Inspection Report# : 2004005*(pdf)*

Significance: G Dec 31, 2004
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
A Maintenance Technician Failed to Follow a Maintenance Procedure Causing the Inadvertent Actuation of Several Unit 3 Safety-Related Relays
A self-revealing, noncited violation of Technical Specification 5.5.1.1 was identified for the failure of a maintenance technician to follow a maintenance order (MO) which led to the inadvertent actuation of several Unit 3 safety-related relays and the temporary loss of one qualified electrical circuit between the offsite transmission network and the Unit 2 onsite Class 1E electrical power distribution system .

The finding was determined to be more than minor because the initiating events cornerstone objective was affected by a human performance error that increased the likelihood of a loss of offsite power event. Based on the results of the significance determination process (Phase 1 evaluation), the finding was determined to have very low safety significance (Green) because the failure of the maintenance technician to follow the work plan of the MO did not contribute to both the likelihood of a reactor trip and simultaneously the lack of availability of mitigating equipment or functions. Both of Unit 2's EDGs were available. The finding had cross-cutting aspects in the area of human performance because the failure of the maintenance technician to follow the work plan of the MO was the direct cause of the finding.
Inspection Report# : 2004005*(pdf)*

Significance: N/A Dec 03, 2004
Identified By: Self-Revealing
Item Type: FIN Finding
Unplanned Scrams with Loss of Normal Heat Removal
The U.S. Nuclear Regulatory Commission performed this supplemental inspection to assess the licensee's evaluations associated with two unplanned reactor trips with loss of normal heat removal of Unit 2 during calender year 2002 and one unplanned reactor trip with loss of normal heat removal of Unit 2 during calendar year 2004. The cumulative effect of these trips was that the Performance Indicator for unplanned scrams with loss of normal heat removal crossed the threshold from Green (very low risk significance) to White (low to moderate risk significance) for the second quarter of calendar year 2004. The licensee performed individual root cause evaluations for the three trips. In addition to the individual trip evaluations, the licensee performed a self-assessment evaluation to identify any performance and process issues that led to the White performance indicator. During this supplemental inspection, performed in accordance with Inspection Procedure 95001, the inspector determined that the licensee performed a comprehensive and thorough evaluation in which specific problems were identified, an adequate root cause evaluation was performed, and corrective actions were taken or planned to prevent recurrence.
Inspection Report# : 2004017*(pdf)*

Mitigating Systems

Significance: G Aug 17, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
Improper Acceptance Limits for Surveillance Testing
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the failure to provide procedures that incorporated requirements and acceptance limits for inservice testing. The licensee's use of an inappropriate computer software program resulted in an incorrect determination of acceptability for 14 of 28 surveillance tests. For example, on August 15, 2005, an alert limit was exceeded on charging Pump 3P191 and the issue was not identified until 8 hours after completing the surveillance test. The finding had crosscutting aspects in the area of human performance because the use of the faulty software program by maintenance engineering personnel directly contributed to the cause of the finding. Additionally, this issue had problem identification and resolution crosscutting aspects in that maintenance engineering personnel did not implement timely corrective actions to resolve the software issues.

The finding was determined to be more than minor because it was associated with the human performance attribute of the mitigating systems cornerstone. It also affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Additionally, if left uncorrected, this issue could have resulted in equipment being considered operable even though testing may have demonstrated the equipment was inoperable. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance because the finding did not represent an actual loss of a single train of a safety system for greater than its Technical Specification allowed outage time.

Inspection Report# : 2005004*(pdf)*

Significance: G Jun 26, 2005
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY IMPLEMENT MAINTENANCE RULE REQUIREMENTS FOR SBCS HEADER CRACKS
The inspectors identified a noncited violation of 10 CFR 50.65 (a)(1) for the failure to include component deficiencies of a system important to

safety in the maintenance rule program. Specifically, the licensee did not incorporate piping header failures of the Unit 2 and Unit 3 steam bypass control system into the maintenance rule program to ensure appropriate monitoring and goal setting activities were established. This issue was entered into the corrective action program as AR 050200923.

The finding was determined to be greater than minor because it affected the equipment reliability attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring the availability and reliability of systems that respond to initiating events. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance because the SBCS did not actually experience a loss of safety function.
Inspection Report# : 2005003*(pdf)*

Significance: G Dec 31, 2004
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Improper High Pressure Safety Injection Check Valve Maintenance
A self-revealing, noncited violation of Technical Specification 5.5.1.1 was identified for the failure of the licensee to implement adequate maintenance procedures which led to RWST inventory to inadvertently be introduced into the reactor coolant system.

The finding was determined to be more than minor because it affected the procedure quality attribute of the mitigating systems cornerstone. Based on the results of the significance determination process (Phase 1 evaluation), the finding was determined to have very low safety significance (Green) because the improper maintenance performed did not result in an actual loss of safety function. The finding had crosscutting aspects in the area of human performance because the inadequate MO directly contributed to the cause of the finding.
Inspection Report# : 2004005*(pdf)*

Significance: G Dec 31, 2004
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Missing Taper Pins in Component Cooling Water System Butterfly Valves
A self-revealing, noncited violation of 10CFR 50, Appendix B, Criterion XVI, was identified for the licensee’s failure to determine the cause of missing taper pins in component cooling water (CCW) 28 inch Fisher butterfly valves and to take appropriate corrective actions to prevent recurrence.

The finding was more than minor because it affected the equipment performance attribute of the mitigating systems cornerstone, and if left uncorrected, could result in a more significant safety concern. Missing taper pins increase the potential to render the CCW system inoperable due to cross train leakage because the 50 gpm leak caused by a missing taper pin exceeds the operability leak rate limit of 18 gpm. Based on the results of the Significance Determination Process, Phase 1 evaluation, the finding was determined to have very low safety significance (Green) because it did not result in an actual loss of safety function of the CCW system. This finding also had crosscutting aspects associated with problem identification and resolution, because the condition was not properly corrected when previously identified.
Inspection Report# : 2004005*(pdf)*

Significance: G Oct 26, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Measures to Prevent Installing Spare Past Their Shelf-life
A non-cited violation was identified for failure to establish measures to ensure non-conforming replacement parts would not be installed in the plant. The licensee's apparent cause evaluation for a premature failure of an electrolytic capacitor in the Channel C power supply of the plant protection system noted that the failed component should not have been installed in the plant because it was beyond its recommended shelf life at the time of installation. This may have contributed to the power supply failure 18 months into a 10-year service life. The team noted that the licensee failed to subsequently implement measures to ensure that replacement parts with electrolytic capacitors were within their shelf-life prior to installation in safety-related systems, which was a violation of 10 CFR 50, Appendix B, Criterion XV. The licensee's program controlled only electrolytic capacitors stocked individually. This issue was entered in to the licensee's corrective action program under Action Request 041101130.

This finding affected the mitigating systems cornerstone, and was more than minor because, if left uncorrected, it could become a more significant safety problem, since it could increase the failure rate of the plant protection system. This issue screened as Green in a Phase 1 assessment, since the finding did not result in a loss of function, since only one train was affected by the only known failure.
Inspection Report# : 2004009*(pdf)*

Significance: G Oct 26, 2004
Identified By: NRC
Item Type: FIN Finding
Intermittent Failure Not Rigorously Troubleshot or Postmaintenance Tested

A finding was identified concerning non-rigorous troubleshooting and postmaintenance testing of an intermittent failure which led to the declaring equipment operable without reasonable assurance that the system would reliably perform as intended. Between September 10 and 16, 2004, an intermittent failure spuriously tripped in the Steam Generator 2 low flow or pre-trip bistables in Channel A of the plant protection system in Unit 3 five times. On separate occasions, maintenance technicians replaced different circuit cards that were thought to possibly cause the failures observed. Each time, operators declared the system operable based on passing its surveillance test without any additional monitoring for further intermittent failures and without confirming that any of the removed parts were bad. The team determined that no formal troubleshooting plan was used until the team asked to review the plan. Upon creating a formal plan, the licensee promptly identified debris in a circuit card connected thought to have been introduced during a recent calibration activity.

The performance deficiency associated with this event was a failure to follow the guidance of Generic Letter 91-18 to ensure there was a reasonable assurance that the system would perform reliably before declaring it operable. This resulted in receiving a repeat spurious bistable trip signal during unrelated testing on a redundant channel, necessitating unplanned LCO actions which placed the plant closer to a trip condition. This finding was greater than minor because it affected the equipment performance attribute of the Initiating Events cornerstone and directly affected the cornerstone objective of limiting events that challenge plant stability. The finding was of very low safety significance because it did not contribute to the likelihood of a LOCA initiator, did not increase the likelihood of both a reactor trip and unavailability of mitigation equipment, and did not simultaneously increase the likelihood of a fire or flooding event as described in the Significance Determination Process Phase 1 screening worksheet.
Inspection Report# : 2004009*(pdf)*

Significance: G Oct 26, 2004
Identified By: Self-Revealing
Item Type: FIN Finding
Response Procedures for Clogged Intake Screens Did Not Address a Plant-Level Response to Avoid Unnessary Trips
A self-revealing finding was identified because plant procedures for responding to debris at the plant intake did not address responding to a large influx of sea grass. The licensee identified this issue during their root cause assessment of the July 24, 2004, manual trip of Unit 3. Sea grass blocked the sea water intake for the circulating water system, and operators unsuccessfully attempted to keep the traveling screens clear until they eventually failed and stopped rotating. Neither SO23-2-5, "Operating Instruction for Circulating Water System," Revision 21, nor SO23-2-7, Operation of Traveling Rakes and Screens," Revision 10, nor Alarm Response Instruction SO23-15-99.C, "Annunciator Panel 99.C," Revision 6 provided adequate guidance. Specifically, these procedures contained no guidance to take plant-level actions to reduce circulating water flow if actions to clear the screens were inadequate to restore normal flow. The licensee implemented appropriate corrective actions to improve the applicable response procedures, and improved policies for proactive monitoring of tide and weather conditions which could produce excessive sea grass intake. Reference Licensee Event Report 05000362/2004001-00 and Action Request 040600324. The team determined that the finding did not represent a noncompliance because it related to non-safety-related secondary plant equipment.

The finding is a performance deficiency because the alarm response and system operating procedures did not provide adequate instructions to operators to allow them to appropriately respond to more significant episodes of sea grass intrusion at the plant intake. The licensee's root cause assessment stated that more debris was expected during periods of strong surf and large tidal scope, such as was experienced in this event. This finding was more than minor because it was similar to Example 4.b in Manual Chapter 0612, Appendix E. This finding affected the Initiating Events cornerstone objective that procedures have sufficient quality to limit the likelihood of those events that upset plant stability during power operations. This issue screened as having very low safety significance in a Phase 1 assessment, since the finding affected only the initiating events cornerstone, and it affected a transient initiator without simultaneously affecting transient mitigation equipment.
Inspection Report# : 2004009*(pdf)*

Significance: G Oct 07, 2004
Identified By: NRC
Item Type: FIN Finding
INADEQUATE PROGRAM TO PROVIDE TRAINING FOR OPERATORS ASSIGNED DUTIES AS FIRE TECHNICAL ADVISORS
A finding was identified related to an inadequate program to provide training for operators assigned duties as fire technical advisors. The team identified that the fire protection training program was made applicable only to the onsite fire department members. The licensed operators, who perform this advisory role to the onsite fire department, were not provided specific initial or periodic refresher training to be able to perform this role effectively, and there were only enough fire drills conducted for each fire technical advisor to participate in one fire drill every 3 years on average. The licensee approved fire protection program requires that fire department members receive periodic refresher training. This includes repeat classroom instruction for all members over a 2-year period and participation in at least two drills per year. However, the licensee's approved fire protection training program did not discuss training requirements for fire technical advisors. No violation of regulatory requirements occurred because San Onofre Nuclear Generating Station, Units 2 and 3, were licensed before the NRC clarified fire brigade training requirements. This finding was entered into the licensee's corrective action program under Action Request 040801076.

This issue was more than minor because it affected the mitigating systems cornerstone objectives for human performance and protection from external factors (fire), which is to support the capability to prevent undesirable consequences. In Manual Chapter 0609, Appendix F, this finding was categorized as affecting fire prevention and administrative controls, and was assigned a low degradation rating based on the NRC's and licensee's fire drill observations that coordination was generally acceptable between the fire department and the operating crews. Based on this, this finding screens as having very low safety significance (Green) in a Phase 1 Initial Qualitative Screening.
Inspection Report# : 2004008*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Oct 26, 2004
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team concluded that the licensee was effective in identifying, evaluating, and correcting problems. The licensee was proactive in performing self-assessments which were probing and aggressive in addressing negative behavior trends at a low level. The quality of root and apparent cause evaluations continued to be inconsistent, although appropriate actions were being taken to address this issue. The team identified that the operability assessment process was not being implemented consistent with procedures, in part because the procedures did not cover control room operator responsibilities.
Inspection Report# : 2004009*(pdf)*

Last modified : November 30, 2005