UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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February 10, 2006

Richard M. Rosenblum, Senior Vice President
San Onofre, Units 2 and 3
Southern California Edison Co.
P.O. Box 128, Mail Stop D-3-F
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SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION - NRC INTEGRATED INSPECTION REPORTS 05000361/2005005; 05000362/2005005 and 07200041/2005001

Dear Mr. Rosenblum:

On December 31, 2005, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your San Onofre Nuclear Generating Station, Units 2 and 3 facility. The enclosed integrated report documents the inspection findings, which were discussed on September 30, October 21, December 8, December 20, and December 28, 2005, with Dr. R. Waldo and other members of your staff.

The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents two NRC identified and three self-revealing findings of very low safety significance (Green). Four of these findings were determined to involve violations of NRC requirements; however, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as noncited violations (NCVs) consistent with Section VI.A of the NRC Enforcement Policy. If you contest these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at San Onofre Nuclear Generating Station, Units 2 and 3.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Troy W. Pruett, Chief
Project Branch D
Division of Reactor Projects

Dockets: 50-361
50-362
72-041
Licenses: NPF-10
NPF-15

Enclosure:
NRC Inspection Report 05000361/2005005; 05000362/2005005; 07200041/2005001
w/Attachment: Supplemental Information

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R:_REACTORS_SO23\2005\SO2005-05 and 2005-01RPCCO.wpd

RIV:RI:DRP/D	SRI:DRP/D	SPE:DRP/D	C:DRS/PSB	C:DRS/OB
MASitek	CCOsterholtz	GEWerner	MPShannon	ATGody
T-TWP	***T-TWP***	***NA***	***/RA/***	***/RA/***
02/8/06	02/8/06	02/ /06	02/8/06	02/9/06

C:DRS/EB	C:DRS/PEB	C:DNMS/FCD	C:DRP/D	
JAClark	LJSmith	DBSpitzberg	TWPruett	
/RA/	***DLProulx for***	***SPAtwater for***	***/RA/***	
02/9/06	02/7/06	02/9/06	02/10/06	

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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	50-361, 50-362, 72-041
Licenses:	NPF-10, NPF-15
Report No.:	05000361/2005005; 5000362/2005005; and 07200041/2005001
Licensee:	Southern California Edison Co. (SCE)
Facility:	San Onofre Nuclear Generating Station, Units 2, 3, and Independent Spent Fuel Storage Installation
Location:	5000 S. Pacific Coast Hwy. San Clemente, California
Dates:	September 27 through December 31, 2005
Inspectors:	C. C. Osterholtz, Senior Resident Inspector, Project Branch D, DRP M. A. Sitek, Resident Inspector, Project Branch D, DRP S. P. Atwater, Health Physicist, DNMS R. V. Azua, Project Engineer, Project Branch C, DRP J. S. Dodson, Regional Operations Officer, RCB L. C. Carson II, Senior Health Physicist, DRS G. D. Replogle, Senior Reactor Inspector, DRS D. L. Stearns, Health Physicist, DRS C. H. Young, Project Engineer, Project Branch D, DRP T. O. McKernon, Senior Operations Engineer G. W. Johnston, Senior Operations Engineer
Approved By:	Troy W. Pruett, Chief Project Branch D Division of Reactor Projects

SUMMARY OF FINDINGS

IR05000361/2005005, 05000362/2005005; 07200041/2005001; 09/27/05 - 12/31/05; San Onofre Nuclear Generating Station, Units 2, 3, and Independent Spent Fuel Storage Installation; Integrated Resident and Regional Report; Biennial Heat Sink Performance, Maintenance Risk Assessments and Emergent Work Control; Postmaintenance Testing; and Surveillance Testing

This report covered a 3-month period of inspection by resident inspectors and regional office inspectors. The inspection identified five Green findings, four of which were noncited violations. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management's review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. A self-revealing finding was identified for the failure of operations personnel to adequately monitor circulating water gates in accordance with Procedure S023-5.1.1, "Heat Treating the Circulating Water System," while performing a heat treat of the Unit 3 intake structure. This failure caused Unit 3 condenser vacuum to degrade, prompting operations personnel to reduce reactor power by approximately 6 percent. Operations personnel were counseled on the importance of maintaining attentiveness while performing evolutions which could upset plant stability. This finding was entered into the licensee's corrective action program as Action Request 051000701.

  The finding is greater than minor because it was associated with the human performance attribute of the initiating events cornerstone and affected the cornerstone objective of limiting the likelihood of those 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 contributed to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions were not available. The cause of the finding was related to the crosscutting element of human performance in that operations personnel did not ensure that procedural requirements were followed (Section 1R13).

  Cornerstone: Mitigating Systems

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to implement appropriate design controls when plugging component cooling water heat exchanger tubes. Specifically, plugging

heat exchanger tubes constitutes a design change. Criterion III requires the licensee to implement design control measures commensurate with those applied to the original design. The licensee entered the issue into their corrective action program as Action Request 051201123.

The failure to implement appropriate design controls when plugging heat exchanger tubes was a performance deficiency. The issue was more than minor because, if left uncorrected, it could result in a more significant safety concern, in that the heat exchanger may not be able to meet licensing basis/design basis heat exchanger capabilities. The inspectors assessed the finding in accordance with the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet and determined the finding was of very low safety significance. Specifically, this design deficiency was confirmed not to result in loss of operability in accordance with “Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment” (Section 1R07).

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XII, "Measuring and Test Equipment Controls," because the licensee failed to maintain test equipment (used during safety related heat exchanger thermal performance testing) controlled and calibrated within specified performance parameters. Consequently, an inaccurate temperature instrument caused some test results to over predict heat exchanger capability by 28 percent. The licensee entered the issue into their corrective action program as Action Request 051100747.

  The failure to maintain the accuracy of test instrumentation was a performance deficiency because the accuracy of the instrumentation exceeded the vendor’s design specifications. The issue was more than minor because, if left uncorrected, it could result in a more significant safety concern in that the licensee may not detect degraded heat exchanger performance. The inspectors assessed the finding in accordance with the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet and determined the finding was of very low safety significance in that this design deficiency was confirmed not to result in the loss of operability in accordance with "Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment." The issue had human performance crosscutting aspects because the plant engineers did not question suspect data (Section 1R07).

- Green. A self-revealing noncited violation of Technical Specification 5.5.1.1 was identified for the failure of maintenance personnel to follow Procedure SO23-II-1.1.2, "Surveillance Requirement, Plant Protection System, Channel B," Revision 6, during surveillance testing of the Unit 2 Channel B plant protection system on October 12, 2005. This failure resulted in the loss of the main steam isolation system function and a portion of the reactor protection system function for approximately one hour. This issue was entered into the licensee’s corrective action program as Action Request 051000550.

  The finding is greater than minor because it was associated with the mitigating systems cornerstone attribute of human performance and affected the associated cornerstone objective to ensure the availability of the plant protection system to respond to initiating

events to prevent undesirable consequences. Using the Phase 1 worksheets in Manual Chapter 0609, "Significance Determination Process," the inspectors determined that a Phase 2 analysis was required because the finding represented a loss of safety function of portions of the plant protection system. The inspectors performed a Phase 2 analysis using Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," of Manual Chapter 0609, and the Phase 2 worksheets for the San Onofre Nuclear Generating Station. The inspectors assumed that the incorrect setpoints for plant protection system Channels C and D low steam generator pressure were in service for approximately one hour. Based on the results of the Phase 2 analysis, the finding is determined to have very low safety significance. The finding had crosscutting aspects in the area of human performance because the failure of instrumentation and control technicians to follow procedures and the failure of supervision to provide oversight during maintenance activities directly contributed to the cause of the finding (Section 1R22).

Cornerstone: Barrier Integrity

- Green. A self-revealing noncited violation of Technical Specification 3.6.6.1 was identified for the Unit 3 containment emergency cooling units being inoperable for longer than the allowed outage time of 72 hours. The implementation of inadequate procedures, specifically Procedure SO23-3-3.13, "Containment Cooling/Spray Monthly Tests," resulted in containment fan cooler breakers having improper overcurrent setpoints. The procedures were revised and the containment cooler fan breakers were adjusted to their proper setpoints. This issue has been entered into the licensee's corrective action program as Action Request 051000020.

  The finding is greater than minor because it is associated with the procedure quality attribute of the barrier integrity cornerstone. It also affected the cornerstone objective of ensuring the integrity of the reactor containment. The Phase 1 worksheets in Manual Chapter 0609, "Significance Determination Process," were used to conclude that an Appendix H "Containment Integrity Determination Process," analysis was required because the finding involved an actual reduction in defense-in-depth for the atmospheric pressure control of the reactor containment. Table 4.1 of Appendix H of Manual Chapter 0609 indicated that the containment cooling safety function can impact late containment failure and source terms, but not large early release frequency. Based on the results of the Appendix H analysis, the finding is determined to have very low safety significance. The cause of the finding is related to the crosscutting element of human performance in that maintenance personnel did not ensure the correct breaker overcurrent tolerances were incorporated into surveillance and postmaintenance testing procedures (Section 1R19).

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Unit 2 began the inspection period at 99 percent power. Unit 2 was reduced to 94 percent power on October 11, 2005, in order to repair a tube leak in second point feedwater Heater 2ME038. Unit 2 was returned to 99 percent power on October 16, 2005, where it remained through the end of the inspection period.

Unit 3 began the inspection period at 100 percent power. Unit 3 was reduced to 94 percent power on October 15, 2005, for two hours during a heat treat of the Unit 3 circulating water intake structure. Unit 3 was reduced to 80 percent reactor power on December 12, 2005, in order to repair a leak in the main condenser. Unit 3 was returned to 100 percent power on December 14, 2005, where it remained through the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

.1 Partial System Walkdowns

The inspectors: (1) walked down portions of the two below listed risk important systems and reviewed plant procedures and documents to verify that critical portions of the selected systems were correctly aligned; and (2) compared deficiencies identified during the walkdown to the licensee's Updated Final Safety Analysis Report (UFSAR) and corrective action program (CAP) to ensure problems were being identified and corrected.

- September 28, 2005, Unit 2, component cooling water surge tank nitrogen
- December 5, 2005, Unit 2, emergency diesel Generator 2G002

Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed two samples.

.2 Complete System Walkdown

The inspectors: (1) reviewed plant procedures, drawings, the UFSAR, Technical Specifications (TSs), and vendor manuals to determine the correct alignment of the auxiliary feedwater system; (2) reviewed outstanding design issues, operator workarounds, and UFSAR documents to determine if open issues affected the

functionality of the auxiliary feedwater system; and (3) verified that the licensee was identifying and resolving equipment alignment problems. Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

Quarterly Inspection

The inspectors walked down the six below listed plant areas to assess the material condition of active and passive fire protection features and their operational lineup and readiness. The inspectors: (1) verified that transient combustibles and hot work activities were controlled in accordance with plant procedures; (2) observed the condition of fire detection devices to verify they remained functional; (3) observed fire suppression systems to verify they remained functional and that access to manual actuators was unobstructed; (4) verified that fire extinguishers and hose stations were provided at their designated locations and that they were in a satisfactory condition; (5) verified that passive fire protection features (electrical raceway barriers, fire doors, fire dampers, steel fire proofing, penetration seals, and oil collection systems) were in a satisfactory material condition; (6) verified that adequate compensatory measures were established for degraded or inoperable fire protection features and that the compensatory measures were commensurate with the significance of the deficiency; and (7) reviewed the UFSAR to determine if the licensee identified and corrected fire protection problems.

- December 19, 2005, Unit 2, saltwater cooling pump room
- December 19, 2005, Unit 3, saltwater cooling pump room
- December 22, 2005, Unit 2, Train A charging pump room
- December 22, 2005, Unit 2, Train B charging pump room
- December 22, 2005, Unit 3, Train A charging pump room
- December 22, 2005, Unit 3, Train B charging pump room

Documents reviewed by the inspectors included:

- Updated Fire Hazards Analysis, San Onofre Nuclear Generating Station Units 1, 2, and 3, Revision 15

The inspectors completed six samples.

Annual Inspection

On October 4, 2005, the inspectors observed a fire brigade drill to evaluate the readiness of licensee personnel to prevent and fight fires, including the following aspects: (1) the number of personnel assigned to the fire brigade, (2) use of protective clothing, (3) use of breathing apparatuses, (4) use of fire procedures and declarations of emergency action levels, (5) command of the fire brigade, (6) implementation of pre-fire strategies and briefs, (7) access routes to the fire and the timeliness of the fire brigade response, (8) establishment of communications, (9) effectiveness of radio communications, (10) placement and use of fire hoses, (11) entry into the fire area, (12) use of fire fighting equipment, (13) searches for fire victims and fire propagation, (14) smoke removal, (15) use of pre-fire plans, (16) adherence to the drill scenario, (17) performance of the post-drill critique, and (18) restoration from the fire drill. The licensee simulated a fire in the Unit 2 turbine building switchgear Room T2-203. Documents reviewed by the inspectors included:

Procedure SO123-XIII-21, "Fire Protection Procedure," Revision 9

Drill Scenario - Drill Number 2005-0013, "Unit 2, Turbine Building Elevation 30' 0" Switchgear Room T2-203"

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R07 Biennial Heat Sink Performance (71111.07B)

a. Inspection Scope

The inspectors reviewed design documents (e.g., calculations and performance specifications), program documents, implementing documents (e.g., test and maintenance procedures), and corrective action documents. The inspectors interviewed chemistry personnel, maintenance personnel, engineers, and program managers.

The inspectors verified whether testing, inspection and maintenance, or the biotic fouling monitoring program provided sufficient controls to ensure proper heat transfer. Specifically, the inspectors reviewed heat exchanger test methods, test results from performance testing, inspection results, and chemical controls to limit fouling.

For the ultimate heat sink and its subcomponents, the inspectors verified that the heat sink was free from clogging due to macrofouling. The inspectors also reviewed eddy current inspection for the selected heat exchangers, when available. The inspectors selected the following heat exchangers for this inspection:

- Unit 2, Train B component cooling water heat exchanger
- Unit 2, Train A emergency diesel generator jacket cooling water heat exchanger
- Train B, control room emergency air clearnup system (air conditioning portion only)

The inspectors completed 3 of the 2 - 3 required samples.

b. Findings

.1 Failure to Control Heat Exchanger Plugging in Accordance With Design Controls

Introduction. The inspectors identified a Green noncited violation 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to implement appropriate design controls when plugging component cooling water heat exchanger tubes. Specifically, plugging heat exchanger tubes constitutes a design change. Criterion III requires the licensee to implement design control measures commensurate with those applied to the original design.

Discussion. The inspectors identified that the licensee routinely plugged component cooling water heat exchanger tubes without implementing appropriate design controls. The licensee generally believed that they could plug up to 15 percent of the tubes without challenging heat exchanger operability. The inspector determined that the licensee had not performed an analysis to validate this assumption. At the time of the inspection, the worst in-service component cooling water heat exchanger (S21203ME002, Unit 2, Train B) had approximately 6 percent of the tubes plugged.

Mechanical plugging of heat exchanger tubes affects the overall heat transfer capability of the heat exchangers and is, accordingly, a design change. 10 CFR Part 50, Appendix B, Criterion III, requires the licensee to implement the same controls for design changes as implemented for the original design. In response to the concern, the licensee planned to establish appropriate design controls for heat exchanger tube plugging. Through the review of thermal performance testing, the inspectors verified that the heat exchanger remained operable.

Analysis. The failure to implement appropriate design controls when plugging heat exchanger tubes was a performance deficiency because engineering personnel did not have a process to ensure the heat transfer capability would remain above minimum design values. The issue was more than minor because, if left uncorrected, it could result in a more significant safety concern, in that the heat exchanger may not be able to meet licensing basis/design basis heat exchanger capability. The inspectors assessed the finding in accordance with the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet and determined the finding was of very low safety significance. This design deficiency was confirmed not to result in loss of operability in accordance with “Part 9900, Technical Guidance, Operability Determination Process for Operability and Functional Assessment.”

Enforcement. 10 CFR Part 50, Appendix B, Criterion III requires, in part, that design changes, including field changes, be subject to design control measures commensurate with those applied to the original design. The inspectors considered plugging heat exchanger tubes a design change. Contrary to the above, the licensee failed to subject the plugging of component cooling water heat exchanger tubes to design control measures commensurate with those applied to the original design. Because this issue is of very low safety significance and has been entered into the CAP as Action Request (AR) 051201123, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000361; 362/2005005-01).

.2 Inadequate Calibration of Component Cooling Water Test Equipment

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion XII, "Measuring and Test Equipment Controls," because the licensee failed to properly control and maintain test equipment (used during safety-related heat exchanger thermal performance testing) calibrated within specified temperature limits. An inaccurate temperature instrument caused some test results to over predict heat exchanger capability by 28 percent.

Discussion. The inspectors reviewed test results associated with the February 10, 2004, Unit 2 Train B component cooling water heat exchanger thermal performance test. The inspectors noted that the heat loads calculated for each side of the heat exchanger differed by approximately 28 percent. The calculated heat loads should have been the same.

The inspectors asked the licensee to determine the cause of the discrepancy. The licensee determined that the sea water cooling outlet temperature indicated 4EF higher than the temperature estimated by the engineers. This temperature exceeded the specified calibrated accuracy of the instrument (± 0.09EF).

10 CFR Part 50, Appendix B, Criterion XII, requires, in part, that measures shall be established to assure that instruments used in activities affecting quality are properly controlled, calibrated, and adjusted to maintain accuracy within necessary limits.

The inspectors expressed concern because the licensee had used erroneous data to determine heat exchanger operability. In response to the concerns, the licensee evaluated the impact of the temperature error and determined that the heat exchanger remained operable.

Analysis. The failure to maintain the accuracy of test instrumentation was a performance deficiency because the instrumentation exceeded the vendor's design specifications. The issue was more than minor because, if left uncorrected, it could result in a more significant safety concern. The inspectors assessed the finding in accordance with the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet and determined the finding was of very low safety significance. Specifically, this design deficiency was confirmed not to result in loss of operability in accordance with "Part 9900, Technical Guidance, Operability Determination Process for

Operability and Functional Assessment." The issue had human performance crosscutting aspects because the plant engineers did not question suspect data.

Enforcement. 10 CFR Part 50, Appendix B, Criterion XII, requires, in part, that measures be established to assure that instruments used in activities affecting quality are properly controlled, calibrated, and adjusted to maintain accuracy within necessary limits. Contrary to the above, on February 10, 2004, test instruments used during the testing of the Unit 2 Train B component cooling water heat exchanger (an activity affecting quality) were not properly controlled, calibrated or adjusted to maintain accuracy within the necessary limits. Because this issue is of very low safety significance and has been entered into the CAP as AR 051100747, this violation is being treated as a NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000361/2005005-02).

.3 Adequacy of the Component Cooling Water Surveillance Methods

Introduction. The inspectors opened an unresolved item concerning the component cooling water heat exchanger capability and the test methods used to evaluate heat exchanger capability.

Discussion. During the inspection, the inspectors identified the following discrepancies:

- The UFSAR specified capability for each component cooling water heat exchanger as 176 E6 BTU/hour but the vendor specified a capability of only 125 E6 BTU/hour. The licensee could not explain the discrepancy at the time of the inspection.

- Design Bases Document "Component Cooling Water System, DBD-SO23-400," Revision 9, specifies three requirements that the Component Cooling Water (CCW)/Saltwater Cooling (SWC) heat exchanger must meet in order to achieve its safety function. The licensee had developed acceptance criteria for two of the three requirements in Procedures "CCW/SWC Heat Exchanger Performance Test, —27-29" and "CCW/SWC Heat Exchanger Operability, —27-23." The licensee did not incorporate the design basis document requirement to maintain a minimum overall heat transfer for the heat exchanger into the test procedures.

- The licensee used two different testing methods to demonstrate heat exchanger operability, however, neither method bounded worst case design basis conditions. Specifically, when performing heat exchanger thermal performance testing in accordance with Calculation —27-029, "CCW/SWC Heat Exchanger Performance Tests," Revision 0, the licensee extrapolated the test results to design basis conditions. However, since the licensee backwashed the heat exchangers prior to the tests, the test results did not consider worst case macrofouling. The inspectors determined that the licensee permitted considerable macrofouling of the component cooling water heat exchangers during operations. When performing heat exchanger thermal performance testing in accordance with Calculation —27-023, "CCW/SWC Heat Exchanger Operability," Revision 0, the licensee considered the affects from

as-found macrofouling and as-found ocean temperatures. However, the licensee did not extrapolate the data to consider worst case ocean temperature and worst case macrofouling.

This is an unresolved item pending additional NRC inspection into these issues (Unresolved Item 05000361; 362/2005005-03).

Analysis. If appropriate, a significance determination will be performed when inspectors close the unresolved item.

Enforcement. If appropriate, enforcement actions will be considered when closing the unresolved item.

.4 Control Room Air Conditioning Surveillance

Introduction. The inspectors opened an unresolved item to address questions associated with the control room air conditioning system surveillance. The inspectors noted that the licensee did not secure nonsafety-related air conditioning units during the surveillance (or show through analysis that the safety-related unit had adequate capacity above that provided by the nonsafety-related units); and that the licensee did not extrapolate the test results to design basis conditions.

Discussion. The licensee utilizes Surveillance Operating Instruction SO23-3-3.20, "Control Room Emergency Air Cleanup System Surveillance," Revision 14, in part, to test the operability of the control room air conditioning units. The procedure requires the licensee to run the control room air conditioning unit for 2 hours. If different areas within the control room boundary are maintained within design basis temperature limits, the licensee considers the test acceptable.

The inspectors identified that the test did not ensure operability under design basis conditions. First, the licensee performed the test while three nonsafety-related air conditioning units were in service (one nonsafety-related chiller each in the two computer rooms and one in the security guard station). These chillers assisted the safety-related unit in removing the heat load. These nonsafety-related units did not receive safety-related power and would not be available post-accident. Second, the licensee did not extrapolate the test results to ensure that the control room air conditioning unit would remain operable under design basis conditions. Since the test was not performed under worst case conditions (85EF outside air temperature and 67EF seawater), further analysis would normally be needed to properly demonstrate the capability of performing design functions.

In response to the inspectors' concerns, the licensee performed an operability assessment. The licensee demonstrated that the air conditioning units had adequate excess capacity to account for the use of nonsafety-related air conditioning units (during the surveillance) and for the differences between test and accident conditions. Therefore, the only remaining concern related to the adequacy of the surveillance to demonstrate equipment operability.

The licensee indicated that the surveillance for the emergency chill water system demonstrated operability of the control room air conditioning system. The emergency chill water system provides cooling water to the control room air conditioning cooling coils. This issue is unresolved pending additional inspection of the emergency chill water surveillance (Unresolved Item 05000361;362/2005005-04).

Analysis. If appropriate, a significance determination will be performed when inspectors close the unresolved item.

Enforcement. If appropriate, enforcement actions will be considered when closing the unresolved item.

1R11 Licensed Operator Requalification (71111.11)

.1 Requalification Activities Review by Resident Staff

a. Inspection Scope

The inspectors observed testing and training of senior reactor operators and reactor operators on October 11, 2005, to identify deficiencies and discrepancies in the training, to assess operator performance, and to assess the evaluator's critique. The training scenario involved responding to one faulted steam generator while the remaining steam generator experienced a tube rupture. Documents reviewed by the inspectors are listed in the attachment.

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

.2 Biennial Inspection

a. Inspection Scope

The inspectors interviewed five personnel, including two operators, two instructors/evaluators, and a operations support person, regarding the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written and operating examinations from the 2004 examination period. Examination results were assessed to determine if they were consistent with the guidance contained in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," and Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

The review included an assessment of two scenarios that were used in the biennial requalification cycle to determine if they provided adequate discrimination at the minimum acceptable level of operator performance.

The results of the examinations were assessed to determine the licensee's appraisal of operator performance and the feedback of performance analysis to the requalification training program. The inspectors interviewed members of the training department and reviewed minutes of curriculum review committee meetings to assess the responsiveness of the licensed operator requalification program.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed the two below listed maintenance activities to: (1) verify the appropriate handling of structure, system, and component (SSC) performance or condition problems; (2) verify the appropriate handling of degraded SSC functional performance; (3) evaluate the role of work practices and common cause problems; and (4) evaluate the handling of SSC issues reviewed under the requirements of the maintenance rule, 10 CFR Part 50 Appendix B, and the TSs.

- December 2 and 6, 2005, Units 2 and 3, charging pumps secondary packing long term performance

- November 9, 16, and 21, 2005, Units 2 and 3, actions to decrease emergency diesel generator fuel oil filter differential pressure

Documents reviewed by the inspectors are listed in the attachment. The inspectors completed two samples.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

Risk Assessment and Management of Risk

The inspectors reviewed the below listed assessment activity to verify: (1) performance of risk assessments when required by 10 CFR 50.65(a)(4) and licensee procedures prior to changes in plant configuration for maintenance activities and plant operations; (2) the accuracy, adequacy, and completeness of the information considered in the risk assessment; (3) that the licensee recognizes, and/or enters as applicable, the appropriate licensee-established risk category according to the risk assessment results and licensee procedures; and (4) the licensee identified and corrected problems related to maintenance risk assessments.

- October 3, 2005, Unit 3 Train A emergency diesel Generator 3G003 12-year overhaul during periods of peak demand on the off-site electrical grid

Documents reviewed by the inspectors included:

Procedure SO123-XX-10, "Maintenance Rule Risk Management Program Implementation," Revision 2

The inspectors completed one sample.

Emergent Work Control

The inspectors: (1) verified that the licensee performed actions to minimize the probability of initiating events and maintained the functional capability of mitigating systems and barrier integrity systems; (2) verified that emergent work-related activities such as troubleshooting, work planning/scheduling, establishing plant conditions, aligning equipment, tagging, temporary modifications, and equipment restoration did not place the plant in an unacceptable configuration; and (3) reviewed the UFSAR to determine if the licensee identified and corrected risk assessment and emergent work control problems.

- October 5, 2005, Unit 2 Train B component cooling water backup nitrogen line leakage (AR 050901037)

- October 15, 2005, Unit 3 heat treat of the circulating water intake secured early due to personnel error (AR 051000701)

- October 25, 2005, Unit 2 emergency diesel generator line starter screws found loose (AR 050601315)

Documents reviewed by the inspectors are listed in the attachment. The inspectors completed three samples.

b. Findings

Introduction. The inspectors identified a Green self-revealing finding for the failure of operations personnel to adequately monitor circulating water gates while performing a heat treat of the Unit 3 intake structure. This failure caused Unit 3 condenser vacuum to degrade, prompting operations personnel to reduce reactor power by approximately six percent.

Description. On October 15, 2005, the licensee was performing a heat treat of the Unit 3 intake structure to prevent unwanted marine life from obstructing the intake. The heat treat involves recirculating the warmer discharge header seawater into the intake header to increase the temperature in the intake and thus clear the header of small shell fish that could potentially grow and obstruct circulating water flow.

In accordance with Procedure SO23-5.1.1, "Heat Treating the Circulating Water System," Revision 18, step 2.2, operations personnel from the control room directed a plant operator stationed locally at heat treat Panel 3L-111 to open and hold circulating water Gate 6 to 30 percent open. The local plant operator opened Gate 6 by pressing a button on Panel 3L-111. After approximately 45 seconds, the local operator reported to the control room that he had depressed the hold pushbutton when Gate 6 was at 30 percent open. Control room operators noticed that heat treat temperature was rising higher than expected, and directed the local operator to shut Gate 6 to 25 percent open. Upon receiving the instruction to shut Gate 6, the local operator noted that the Gate 6 indicator on Panel 3L-111 showed that Gate 6 was still rising and over 50 percent open. The local operator then proceeded to Gate 6 and noted that its motor was still running. The local operator then returned to Panel 3L-111, depressed the hold pushbutton, and verified locally that Gate 6 had stopped. The shift manager then terminated the Unit 3 heat treat by directing the local operator to fully shut Gate 6.

The failure to properly monitor the status of Gate 6 during the Unit 3 heat treat caused seawater intake temperature to rise above the administrative limit of 125EF for approximately 12 minutes. Maximum seawater temperature during the transient was 132EF. After terminating the Unit 3 heat treat, the cooldown of the seawater intake temperature also exceeded the administrative limit of 1EF per minute, lowering approximately 42EF in 21 minutes. The transient also prompted operations personnel to reduce Unit 3 reactor power to approximately 94 percent due to degrading condenser vacuum. Operations personnel were counseled on the importance of maintaining attentiveness while performing evolutions which could upset plant stability.

Analysis. The performance deficiency associated with this finding involved operations personnel not following procedural requirements. The finding is greater than minor because it was associated with the human performance attribute of the initiating events

cornerstone and affected the cornerstone objective of limiting the likelihood of those 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 were not available. Specifically, the plant response to degrading condenser vacuum would have preserved the balance of plant mitigating systems. The cause of the finding was related to the crosscutting element of human performance in that operations personnel did not ensure that procedural requirements were followed.

Enforcement. No violation of regulatory requirements occurred. The inspectors determined that the finding did not represent a noncompliance because the circulating water system is not subject to the requirements of 10 CFR Part 50, Appendix B. This finding was entered into the licensee's corrective action program as AR 051000701. This finding is identified as FIN 05000362/2005005-05, "Failure to Ensure Procedural Compliance During Unit 3 Heat Treat."

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors: (1) reviewed plants status documents such as operator shift logs, emergent work documentation, deferred modifications, and standing orders to determine if an operability evaluation was warranted for degraded components; (2) referred to the UFSAR and design basis documents to review the technical adequacy of licensee operability evaluations; (3) evaluated compensatory measures associated with operability evaluations; (4) determined degraded component impact on any TSs; (5) used the Significance Determination Process to evaluate the risk significance of degraded or inoperable equipment; and (6) verified that the licensee has identified and implemented appropriate corrective actions associated with degraded components.

- June 25, 2005, AR 031100614-83 - Unit 3 potential for pressurizer heater specification variance for heater internals manufactured by Thermocoax
- October 13, 2005, AR 051000543 - Units 2/3 susceptibility to air entrainment into the emergency core cooling system during the transition to the recirculation phase of long term core cooling
- November 23, 2005, AR 050800238 - Units 2/3 inservice testing software deficiencies
- November 14, 2005, AR 051100625 - Unit 2 component cooling water noncritical loop misalignment
- October 18, 2005, AR 051001225 - Units 2/3 diesel driven fire pump failed surveillance test

- October 25, 2005, AR 050900585 - Units 2/3 reactor coolant pump shaft shear analysis calculation had false assumption

Documents reviewed by the inspectors are listed in the attachment. The inspectors completed six samples.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

Selected Operator Workarounds

The inspectors reviewed the one below listed operator workaround to: (1) determine if the functional capability of the system or human reliability in responding to an initiating event is affected; (2) evaluate the effect of the operator workaround on the operator's ability to implement abnormal or emergency operating procedures; and (3) verify that the licensee has identified and implemented appropriate corrective actions associated with operator workarounds.

- December 15, 2005, Unit 2, containment sump level hi alarm degraded

Documents reviewed by the inspectors included:

- AR 050400397
- AR 050201320

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors selected the five below listed postmaintenance test activities of risk significant systems or components. For each item, the inspectors: (1) reviewed the applicable licensing basis and/or design-basis documents to determine the safety functions; (2) evaluated the safety functions that may have been affected by the maintenance activity; and (3) reviewed the test procedure to ensure it adequately tested the safety function that may have been affected. The inspectors either witnessed or reviewed test data to verify that acceptance criteria were met, plant impacts were

evaluated, test equipment was calibrated, procedures were followed, jumpers were properly controlled, the test data results were complete and accurate, the test equipment was removed, the system was properly re-aligned, and deficiencies during testing were documented. The inspectors also reviewed the UFSAR to determine if the licensee identified and corrected problems related to postmaintenance testing.

- June 28, 2005, Maintenance Order (MO) 05050377 - Unit 3 new feeder cable for HVAC control systems Panel 3L154

- October 13, 2005, Procedure SO23-3-3.23, "Emergency Diesel Generator Testing," Revision 24 - Unit 3 Train A emergency diesel generator postmaintenance test following 12 year overhaul

- December 3, 2005, MO 02101099 - pressurizer heater Bank 2E129 Breaker 2B0602 postmaintenance test

- December 20, 2005, Procedure SO23-3-3.30.4, "Main Steam Isolation Online Valve Test," Revision 7 - Unit 3 atmospheric dump valve postmaintenance test

- December 23, 2004, Procedure SO23-3-3.13, "Containment Cooling/Spray Monthly Tests," Revision 10 - Unit 3 containment cooling unit postmaintenance test

Documents reviewed by the inspectors are listed in the attachment. The inspectors completed five samples.

b. Findings

Introduction. A Green self-revealing NCV of TS 3.6.6.1 was identified for Unit 3 containment emergency cooling units being inoperable for longer than the allowed TS outage time of 72 hours. The implementation of inadequate procedures, specifically Procedure SO23-3-3.13, "Containment Cooling/Spray Monthly Tests," resulted in containment fan cooler breakers having improper overcurrent setpoints.

Description. On October 22, 2005, the Unit 3 Train A containment emergency cooling unit (ECU) 3ME399 did not start during its monthly surveillance test because fan backup Breaker 3BLP0303 had tripped open. The licensee subsequently discovered that Breaker 3BLP0303 had been installed with incorrect overcurrent setpoint tolerances.

On December 23, 2004, the licensee replaced Breaker 3BLP0303 with a Square D 480 VAC Model MDLLAL36300, which required overcurrent trip setpoint tolerances of -0 percent and +25 percent. Engineering Change Package 040500760 included the correct overcurrent setpoint tolerances. However, maintenance personnel did not incorporate the setpoint tolerances into Maintenance Order (MO) 03111416000, which was used to install the breaker. In addition, Procedure SO23-3-3.13, “Containment Cooling/Spray Monthly Tests,” which was used for postmaintenance testing following breaker installation, did not include the correct setpoint tolerances. Instead, the standard overcurrent setpoint breaker tolerances of -25 percent and +25 percent were

used. This caused Breaker 3BLP304 to be susceptible to inadvertently tripping on normal starting current.

Following installation on December 23, 2004, and until September 4, 2005, ECU 3ME399 successfully passed its monthly surveillance tests. On September 4, 2005, Breaker 3BLP0303 tripped on normal starting current during ECU 3ME399's monthly surveillance test. The tripped breaker went undetected after the surveillance was completed because surveillance Procedure SO23-3-3.13 contained instructions to observe starting current, but did not contain instructions to determine if the backup breaker had tripped during the surveillance. The status of Breaker 3BLP0303 was not discovered until October 22, 2005, during the subsequent monthly surveillance test.

The licensee also discovered that the other Unit 3 Train A ECU (3ME401) had its fan backup breaker replaced with the same out-of-tolerance settings as ECU 3ME399. ECU 3ME401 had no surveillance test failures since breaker installation even though it was susceptible to the same failure mechanism as ECU 3ME399. The surveillance and postmaintenance testing procedures were properly revised and the containment cooler fan breakers were adjusted to their proper setpoints. The Unit 3 Train B ECUs and all the Unit 2 ECUs were scheduled to have their backup breakers replaced, but the replacement had not yet been implemented.

Between December 23, 2004, and October 5, 2005, the licensee periodically removed the Unit 3 Train B EDG 3G003 from service. The longest instance was during the 12 year overhaul of EDG 3G003 from August 21 - 28, 2005. TS 3.8.1, Electrical Power Systems, AC Sources, Action B.2, states that a required feature supported by an inoperable emergency diesel generator must be declared inoperable when its redundant required feature is also inoperable. Therefore, a 72 hour shutdown action would have been required for inoperability of both Unit 3 containment cooling trains per TS 3.6.6.1 with EDG 3G003 out of service. The inspectors determined that a loss of safety function for containment cooling occurred during the instances that EDG 3G003 was removed from service from December 23, 2004 to October 5, 2005.

Analysis. The performance deficiency associated with this finding involved the failure of the licensee to properly incorporate procedural steps. The finding is greater than minor because it is associated with the procedure quality attribute of the barrier integrity cornerstone. It also affected the cornerstone objective of ensuring the integrity of the reactor containment. The Phase 1 worksheets in Manual Chapter 0609, “Significance Determination Process,” were used to conclude that an Appendix H “Containment Integrity Determination Process," analysis was required because the finding involved an actual reduction in defense-in-depth for the atmospheric pressure control of the reactor containment. The inspectors performed an analysis using Appendix H, of Manual Chapter 0609. Table 4.1 of Appendix H indicated that the containment cooling safety function can impact late containment failure and source terms, but not large early release frequency. Based on the results of the Appendix H analysis, the finding is determined to have very low safety significance. The cause of the finding is related to the crosscutting element of human performance in that maintenance personnel did not ensure the correct breaker tolerances were incorporated into surveillance and postmaintenance testing procedures.

Enforcement. Technical Specification 3.6.6.1, "Containment Spray and Cooling Systems," requires that two containment spray trains and two containment cooling trains be operable. With two containment cooling trains inoperable, the licensee must restore at least one containment cooling train to an operable status within 72 hours, or be in Mode 3 within 6 hours. Contrary to this, on several occasions between December 2004 and October 2005, two containment cooling trains were inoperable for greater than 72 hours and the licensee did not enter Mode 3 within the following 6 hours. Specifically, the licensee failed to adequately implement the proper overcurrent trip settings for Unit 3 Train A containment cooling fan breakers. When combined with periods of maintenance on Train B components, this resulted in an inadvertent loss of the containment fan cooling safety function. Because the finding is of very low safety significance and has been entered into the licensee's corrective action program as AR 051000020, this violation is being treated as an NCV consistent with Section VI.A of the Enforcement Policy: NCV 05000362/2005005-06, "Inadequate Procedure Results in Inadvertent Loss of Containment Cooling."

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the UFSAR, procedure requirements, and TSs to ensure that the three below listed surveillance activities demonstrated that the SSC's tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the following significant surveillance test attributes were adequate: (1) preconditioning; (2) evaluation of testing impact on the plant; (3) acceptance criteria; (4) test equipment; (5) procedures; (6) jumper/lifted lead controls; (7) test data; (8) testing frequency and method demonstrated TS operability; (9) test equipment removal; (10) restoration of plant systems; (11) fulfillment of ASME Code requirements; (12) updating of performance indicator data; (13) engineering evaluations, root causes, and bases for returning tested SSCs not meeting the test acceptance criteria were correct; (14) reference setting data; and (15) annunciators and alarms setpoints. The inspectors also verified that the licensee identified and implemented any needed corrective actions associated with the surveillance testing.

- October 12, 2005, Unit 2 plant protection system Channel B quarterly functional test
- November 8, 2005, Units 2 and 3, reactor coolant system leak rate calculation
- December 12, 2005, Unit 3 fuel building pump room Train B emergency air conditioning unit

Documents reviewed by the inspectors are listed in the attachment. The inspectors completed three samples.

b. Findings

Introduction. A Green self-revealing NCV of TS 5.5.1.1 was identified for the failure of instrumentation and control (I&C) technicians to follow procedural requirements during surveillance testing of the Unit 2 Channel B plant protection system (PPS). This failure resulted in the loss of the function of the main steam isolation system (MSIS) and a portion of the reactor protection system for approximately one hour.

Description. On October 12, 2005, I&C technicians were performing a quarterly surveillance test of the Unit 2 Channel B PPS. The I&C crew consisted of a qualified test director, an unqualified test director trainee, and two additional technicians. The surveillance was being performed in accordance with Procedure SO23-II-1.1.2, "Surveillance Requirement, Plant Protection System, Channel B," Revision 6. Portions of Procedure SO23-II-1.1.2 required manipulation of plant equipment at remote shutdown Panel 2L042. The qualified test director sent the test director trainee to Panel 2L042 to perform Step 6.27.26, which required pressing of the Channel B low steam generator pressure setpoint reset Button HS9150B2. The trainee instead pushed the Channel D and then the Channel C low steam generator pressure setpoint reset buttons before finally pushing the Channel B button. The pressing of the Channels C and D buttons was not directed by Procedure SO23-II-1.1.2. The licensee indicated that the technician had failed to bring Procedure SO23-II-1.1.2 with him and by mistake pressed the Channels C and D buttons believing them to be the Channel B button. The licensee indicated that the trainee believed that his mistakes had not resulted in any adverse impact to the plant. The trainee left the plant after his work shift without informing anyone of his mistakes.

The trainee's mistakes, however, resulted in the Channels C and D main steam isolation and reactor protection low steam generator setpoints being reduced from 741 psia to approximately 645 psia. PPS Channel B was already by-passed as a normal part of the surveillance test. During a post-surveillance walkdown, the I&C test director and a different technician noticed the Channels C and D setpoint changes in the control room and informed the appropriate Unit 2 control room operators. Operations personnel entered abnormal operating instruction SO23-13-18, "Reactor Protection System Failure/Loss of Vital Bus," Revision 6; and returned Channel B to service; placed Channel C in by-pass; and placed Channel D in trip. As a result of the trainee's mistakes combined with PPS Channel B by-passed, neither the main steam isolation signal or a reactor trip signal would have been generated on low steam generator pressure at the UFSAR required setpoint of 741 psia. Unit 2 was in this condition for approximately one hour.

The inspectors reviewed Procedure SO123-I-1.3, "Work Activity Guidelines," Revision 12 and Procedure SO123-XV-27, "On-The-Job Training [OJT] and Task Performance Evaluation Program," Revision 8. The inspectors determined that the test director trainee failed to follow Procedure SO123-I-1.3 when he did not bring a copy of "continuous use" Procedure SO23-II-1.1.2 to the remote shutdown panel. Attachment 8, Item G of Procedure SO123-I-1.3 defines "continuous use" as the "procedure is performed step-by-step with the procedure 'in-hand' and signed/checked off as it is completed." In addition, the inspectors determined that the test director failed to follow the requirements of Procedure SO123-XV-27 when he allowed the trainee to manipulate plant equipment at the remote shutdown panel unsupervised. Step 6.3.2 of Procedure

SO123-XV-27 states that "OJT trainers are responsible for controlling the actions and work performed by the trainees during the conduct of training." The licensee indicated that this step meant that the trainer was expected to have been present at the remote shutdown panel controlling the actions of the trainee.

Analysis. The performance deficiency associated with this finding involved maintenance personnel failing to follow procedural requirements. The finding is greater than minor because it is associated with the mitigating systems cornerstone attribute of human performance and affects the associated cornerstone objective to ensure the availability of the plant protection system to respond to initiating events to prevent undesirable consequences. The Phase 1 worksheets in Manual Chapter 0609, "Significance Determination Process," were used to conclude that a Phase 2 analysis was required because the finding represented a loss of safety function of portions of the plant protection system. The inspectors performed a Phase 2 analysis using Appendix A, "Determining the Significance of Reactor Inspection Findings For At Power Situations," of Manual Chapter 0609, and the Phase 2 worksheets for San Onofre Nuclear Generating Station. The inspectors assumed that the incorrect setpoints for PPS Channels C and D low steam generator pressure were in service for approximately one hour. Based on the results of the Phase 2 analysis, the finding is determined to have very low safety significance. The finding had crosscutting aspects in the area of human performance because the failure of I&C technicians to follow procedures and the failure of supervision to provide oversight during maintenance activities directly contributed to the cause of the finding.

Enforcement. TS 5.5.1.1 states, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, dated February 1978. Regulatory Guide 1.33, Appendix A, Section 8, “Procedures for Control of Measuring and Test Equipment and for Surveillance Tests, Procedures, and Calibrations," requires, in part, that maintenance that can affect the performance of safety-related equipment should be properly performed in accordance with written procedures appropriate to the circumstances. Procedure SO23-II-1.1.2, "Surveillance Requirement, Plant Protection System, Channel B," Revision 6, required that only the Channel B low steam generator pressure setpoint reset button be pressed. Contrary to this, on October 12, 2005, maintenance personnel pressed the Channel C and D steam generator pressure setpoint reset buttons in addition to the Channel B reset button. This failure to follow procedures resulted in the loss of the function of the main steam isolation system and a portion of the reactor protection system for approximately one hour. Because the finding is of very low safety significance and has been entered into the licensee’s CAP as AR 051000550, this violation is being treated as an NCV consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000361/2005005-07, "Failure to Follow Procedures Results in Loss of MSIS Safety Function."

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the UFSAR, plant drawings, procedure requirements, and TSs to ensure that the below listed temporary modification was properly implemented. The inspectors: (1) verified that the modifications did not have an affect on system operability/availability; (2) verified that the installation was consistent with modification documents; (3) ensured that the post-installation test results were satisfactory and that the impact of the temporary modification on permanently installed SSC's were supported by the test; (4) verified that the modifications were identified on control room drawings and that appropriate identification tags were placed on the affected drawings; and (5) verified that appropriate safety evaluations were completed. The inspectors verified that the licensee identified and implemented any needed corrective actions associated with the temporary modification.

- December 30, 2005, Unit 3, atmospheric dump Valve 3HV8419 accelerometer installation

Documents reviewed by the inspectors included:

- Engineering Change Package 051200288-19

The inspectors completed one sample.

b. Findings

No findings of significance were identified.

Cornerstone: Occupational Radiation Safety

2. RADIATION SAFETY

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess the licensee's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas (HRAs), and worker adherence to these controls. The inspector used the requirements in 10 CFR Part 20, the TSs, and the licensee's procedures required by TSs as criteria for determining compliance. During the inspection, the inspector interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspector performed independent radiation dose rate measurements and reviewed the following items:

- Performance indicator events and associated documentation packages reported by the licensee in the Occupational Radiation Safety Cornerstone

- Controls (surveys, posting, and barricades) of five radiation, high radiation, or airborne radioactivity areas

- Radiation exposure permits, procedures, engineering controls, and air sampler locations

- Conformity of electronic personal dosimeter alarm setpoints with survey indications and plant policy; workers' knowledge of required actions when their electronic personal dosimeter noticeably malfunctions or alarms.

- Barrier integrity and performance of engineering controls in airborne radioactivity areas

- Physical and programmatic controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools

- Self-assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection

- Corrective action documents related to access controls

- Licensee actions in cases of repetitive deficiencies or significant individual deficiencies

- Radiation exposure permit briefings and worker instructions

- Adequacy of radiological controls such as required surveys, radiation protection job coverage, and contamination controls during job performance

- Changes in licensee procedural controls of high dose rate, HRAs and very high radiation areas

- Controls for special areas that have the potential to become very high radiation areas during certain plant operations

- Posting and locking of entrances to all accessible high dose rate, HRAs and very high radiation areas

- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

Either because the conditions did not exist or an event had not occurred, no opportunities were available to review the following items:

- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem Cumulative Effective Dose Equivalent

- Dosimetry placement in high radiation work areas with significant dose rate gradients

Therefore, the inspector completed 21 of the required 21 samples.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspector assessed licensee performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspector used the requirements in 10 CFR Part 20 and the licensee's procedures required by TSs as criteria for determining compliance. The inspector interviewed licensee personnel and reviewed:

- Interfaces between operations, radiation protection, maintenance, maintenance planning, scheduling, and engineering groups
- Person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the actual work activity time requirements
- Dose rate reduction activities in work planning
- Exposure tracking system
- Workers use of the low dose waiting areas
- Exposures of individuals from selected work groups
- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Source-term control strategy or justifications for not pursuing such exposure reduction initiatives
- Specific sources identified by the licensee for exposure reduction actions and priorities established for these actions, and results achieved against since the last refueling cycle
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or HRAs

- Declared pregnant workers during the current assessment period, monitoring controls, and the exposure results

- Self-assessments, audits, and special reports related to the ALARA program since the last inspection

- First-line job supervisors' contribution to ensuring work activities are conducted in a dose efficient manner

- Resolution through the corrective action process of problems identified through post-job reviews and post-outage ALARA report critiques

- Corrective action documents related to the ALARA program and follow-up activities such as initial problem identification, characterization, and tracking

- Effectiveness of self-assessment activities with respect to identifying and addressing repetitive deficiencies or significant individual deficiencies

The inspector completed 5 of the required 15 samples and 11 of the optional samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspector sampled licensee submittals for the performance indicators listed below for April 2004 to October 2005. To verify the accuracy of the performance indicator data reported during that period, performance indicator definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used to verify the basis in reporting for each data element.

Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness

Licensee records reviewed included corrective action documentation that identified occurrences of locked HRAs (as defined in the licensee's TSs), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in Nuclear Energy Institute 99-02). Additional records reviewed included ALARA (as low as is reasonably achievable) records and whole body counts of selected individual exposures. The inspector interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. In addition, the inspector toured plant areas to verify that high radiation, locked high radiation, and very high

radiation areas were properly controlled.

Public Radiation Safety Cornerstone

- Radiological Effluent Technical Specification/Offsite Dose Calculation Manual Radiological Effluent Occurrences

Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded performance indicator thresholds and those reported to the NRC. The inspectors interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

The inspectors performed a daily screening of items entered into the licensee's corrective action program. This assessment was accomplished by reviewing maintenance orders, condition reports, the management focus list, and attending corrective action review and work control meetings. The inspectors: (1) verified that equipment, human performance, and program issues were being identified by the licensee at an appropriate threshold and that the issues were entered into the CAP; (2) verified that corrective actions were commensurate with the significance of the issue; and (3) identified conditions that might warrant additional follow-up through other baseline inspection procedures.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors completed a semi-annual trend review of station metrics that were documented in station performance reports to identify trends that might indicate the existence of more safety significant issues. The inspectors review consisted of the 12 month period of October 1, 2004 to September 30, 2005. The inspectors reviewed the metrics to determine if system information was being appropriately tracked and to ensure that the proper setpoints were incorporated to flag additional attention to safety-related systems where performance was declining. The inspectors also discussed metric tracking with licensee personnel. Documents reviewed by the inspectors included:

- Station Performance Report for Fourth Quarter, 2004
- Station Performance Report for First Quarter, 2005
- Station Performance Report for Second Quarter, 2005
- Station Performance Report for Third Quarter, 2005

b. Findings and Observations

No findings of significance were identified. However, during the review the inspectors determined that while the current metric tracking system was adequate, it could be more successfully utilized if the metrics were revised to improve usability by licensee management and staff. For example, the performance report could better define parameters used in graphs to provide enhanced readability to the user. Also, information provided in the performance report could be better organized to enhance clarity. Licensee representatives agreed, and indicated that a new metric system, incorporating benchmarking results from several different utilities, was currently in process and would be incorporated in early 2006.

.3 Access Control To Radiologically Significant Areas

a. Inspection Scope

Section 2OS1 evaluated the effectiveness of the licensee's problem identification and resolution processes regarding access controls to radiologically significant areas and radiation worker practices. The inspector reviewed corrective action documents for root cause/apparent cause analysis against the licensee's problem identification and resolution process.

Section 2OS2 evaluated the effectiveness of the licensee's problem identification and resolution processes regarding exposure tracking, higher than planned exposure levels, and radiation worker practices. The inspector reviewed the corrective action documents listed in the attachment against the licensee's problem identification and resolution program requirements.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

1. (Closed) Licensee Event Report (LER) 0500362/2005-002, "Emergency Containment Cooling Inoperable for Longer than Allowed by Technical Specifications"

This issue was determined to be a noncited violation and is documented in section 1R19 of this report as NCV 05000362/2005005-06, "Inadequate Procedure Results in Inadvertent Loss of Containment Cooling." This LER is closed.

2. (Closed) LER 0500361/2005-004, "Personnel Error Causes the Main Steam Isolation System to be Inoperable for Less than One Hour"

This issue was determined to be a noncited violation and is documented in section 1R22 of this report as NCV 05000361/2005005-07, "Failure to Follow Procedures Results in Loss of MSIS Safety Function." This LER is closed.

3. (Closed) LER 0500362/2005-001, "Emergency Diesel Generator 3G003 Declared Inoperable Due to Loose Wiring Connection on Emergency Supply Fan"

The inspectors determined that a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instruction, Procedures, and Drawings" occurred for the failure to follow procedural requirements for root cause evaluations. The failure to comply with this requirement represents a violation of minor significance and is not subject to enforcement action in accordance of Section IV of the NRC's enforcement policy. This LER is closed.

4OA5 Other Activities

.1 TI 2515/161 - Transportation of Reactor Control Rod Drives in Type A Packages

a. Inspection Scope

This area was inspected to verify that the licensee's radioactive material transportation program complies with specific requirements of 10 CFR Parts 20, 71, and Department of Transportation regulations contained in 49 CFR Part 173. The inspector interviewed licensee personnel and determined the licensee had undergone refueling/defueling activities between January 1, 2002 and present. The inspector further determined that the licensee had shipped irradiated control rod drives mechanisms in Department of Transportation Specification 7A Type A packages in April 2002.

b. Findings and Observations

The licensee shipped Unit 1 irradiated control rod drives mechanisms in Department of Transportation Specification 7A Type A packages on April 12, 2002. The inspector determined that the licensee had shipped the irradiated control rod drives mechanisms in a 7A Type A package that specifically met the requirements of 49 CFR 173.412 and 173.415.

No findings of significance were identified.

.2 Operation of an Independent Spent Fuel Storage Installation (ISFSI) (60855)

a. Inspection Scope:

On November 30 through December 1, 2005, an ISFSI inspection was performed. The inspection was conducted using Inspection Procedure 60855. The scope of the inspection included:

- verifying the fuel selected for the next dry fuel storage loading campaign was within the limits specified in the Certificate of Compliance

- evaluating the performance of the Advanced Horizontal Storage Modules (AHSMs) containing the Unit 1 spent fuel and Greater Than Class C (GTCC) waste

- reviewing the design features of the new 24PT4-DSC spent fuel canister

b. Findings:

No findings of significance were identified.

4OA6 Meetings, Including Exit

On September 30, October 21, December 8, December 20, and December 28, 2005 the inspectors presented the inspection results to Dr. R. Waldo and others who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Axline, Engineer, Nuclear Regulatory Affairs
J. Barrow, Supervisor, Health Physics
D. Breig, Station Manager
R. Corbett, Manager, Health Physics
M. Farmer, Supervisor, Health Physics
B. Katz, Vice President, Nuclear Oversight and Regulatory Affairs
M. Love, Manager, Maintenance
A. Martinez, Supervisor, Health Physics
C. McAndrews, Manager, Nuclear Oversight and Assessment
N. Quigley, Manager, Mechanical/Nuclear Maintenance Engineering
A. Scherer, Manager, Nuclear Regulatory Affairs
R. Schofield, Supervisor, Health Physics
M. Short, Manager, Systems Engineering
T. Vogt, Manager, Operations
R. Waldo, Vice President, Nuclear Generation
D. Wilcockson, Manager, Plant Operations
C. Williams, Manager, Compliance
T. Yackle, Manager, Maintenance Engineering

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000361; 362/2005005-01	NCV	Failure to Implement Design Controls for Component Cooling Water Heat Exchanger Tube Plugging (Section 1R07)
05000361/2005005-02	NCV	Failure to Implement Calibration Controls for Component Cooling Water Heat Exchanger Test (Section 1R07)
05000362/2005005-05	FIN	Failure to Ensure Procedural Compliance During Unit 3 Heat Treat (Section 1R13)
05000362/2005005-06	NCV	Inadequate Procedure Results in Inadvertent Loss of Containment Cooling (Section 1R19)
05000361/2005005-07	NCV	Failure to Follow Procedures Results in Loss of Main Steam Isolation System Safety Function 1R22)

Opened

05000361; 362/2005005-03	URI	Improper Acceptance Limits For Surveillance (Section 1R07)
05000361; 362/2005005-04	URI	Questionable Control Room Surveillance (Section 1R07)

Closed

05000362/2005-002	LER	Emergency Containment Cooling Inoperable for Longer than Allowed by Technical Specifications (Section 4OA3)
05000361/2005-004	LER	Personnel Error Causes the Main Steam Isolation System to be Inoperable for Less then One Hour (Section 4OA3)
05000362/2005-001	LER	Emergency Diesel Generator 3G003 Declared Inoperable Due to Loose Wiring Connection on Emergency Supply Fan (Section 4OA3)

Discussed

None

LIST OF DOCUMENTS REVIEWED

In addition to the documents called out in the inspection report, the following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

Section 1R04: Equipment Alignment

ARs

051200894 051200848 051200864 051101206 051100086 050600606
051000297 050801604 050500992 050200406 051201304

Miscellaneous

UFSAR Sections 9.2.2 and 10.4.9

SONGS Units 2 and 3 System Descriptions SD-SO23-400, 750, and 780

Section 1R07B, Biennial Heat Sink Performance:

Procedures and Instructions

SO123-III-2, “Closed Cooling Water System Chemistry Control Program,” Revision 6

SO23-V-3.25, “Component Cooling Water Heat Exchanger Testing,” Revision 9

SO23-I-8.68, “Emergency Diesel Generator Components Check,” Revision 11

SO23-I-8.69, “Emergency Diesel Generator and Engine Inspection,” Revision 21

SO23-3-3.20.1, “Control Room Emergency Air Cleanup System Surveillance - Train B,” Revision 14, conducted September 23, 2005

SO23-3-3.20, “Control Room Emergency Air Cleanup System Surveillance - Train B,” Revision 14, conducted August 19, 2005

SO-3-3.23.1, Attachment 5, “Diesel Generator G003 Operating Parameters,” Revision 20, conducted May 1, 2002 and May 25, 2004

SO213-SPE-62, “Emergency Chilled Water System Train B Flow Verification,” Revision 0

Action Requests

980501775 020201170 960400770 961201645 040900533

Calculations

—0076-040, “Diesel Generator Building Emergency Cooling Load Calculation,” Revision 2

—0073-041, “Aux. Bldg Ctrl Area El 30"-0", Heat Load & Equip Sizing Normal & Emergency,” Revision 8

—0027-029, “CCW/SWC Heat Exchanger Performance Tests,” Revision 0, conducted February 2004

—0027-023, “CCW/SWC Heat Exchanger Operability,” Revision 0

M26.11, “CCW Flow/Pressure Distribution Analysis,” Revision 1

Drawings

"Tube Plug Map for Component Cooling Water Heat Exchanger S21203ME002," Revision 6

"Tube Plug Map for Component Cooling Water Heat Exchanger S21203ME001," Revision 5

"Tube Plug Map for Component Cooling Water Heat Exchanger S31203ME001," Revision 3

"Tube Plug Map for Component Cooling Water Heat Exchanger S31203ME002," Revision 2

N73402-89848, C-372, 11A, "General Arrangement," April 6, 2005

Maintenance Orders

10146011000

Miscellaneous

Updated Final Safety Analysis Report

Technical Specifications

DBD-SO23-400, "Component Cooling Water System," Revision 9

DBD-SO23-750, "Emergency Diesel Generators," Revision 3

"Final Report for the Remote Field Inspection of Diesel Generator Jacket Water Coolers S22420ME546 and S22420ME550," June 2005

"Final Report for the Remote Field Inspection of Diesel Generator Jacket Water Coolers S22420ME547 and S22420ME549," August 2005

Specification Sheet for Emergency Diesel Generator Jacket Water Coolers, Job Number C372

UFSAR/HFHA Change Request 10, September 16, 1998

System Description SD-SO23-400, "Component Cooling Water System," Revision 11

System Description SD-SO23-624, "Control Room Ventilation System," Revision 0

System Description SD-SO23-750, Figure IV-1, "EDG 2G002 Cooling Water System," Revision 12

"Program Response for Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment," March 29, 1991

Letter to the NRC from the licensee dated January 26, 1990, Subject: "Service Water System Problems Affecting Safety-Related Equipment San Onofre Nuclear Generating Stations, Units 1, 2 and 3"

Letter to the NRC from the licensee dated February 23, 1990, "Response to Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment"

Letter to the NRC from the licensee dated April 22, 1991, "Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment"

"SONGS Component Health Report," 2Q05

List of ambient air temperatures from the MET Tower from July 27, 2004 to October 1, 2005

Trend of component cooling water heat exchanger data from June 11, 1991 to February, 2005

Stuthers Wells Exchanger Specification Sheet (component cooling water heat exchangers), December 19, 1975

Section 1R11: Licensed Operator Requalification

Procedures:

SO123-VIII-1, "Recognition and Classification of Emergencies," Revision 20

SO23-12-1, "Standard Post Trip Actions," Revision 18

SO23-12-9, "Functional Recovery," Revision 22

SO23-12-10, "Safety Function Status Check"

SO23-12-11, "EOI Supporting Attachments," Revision 1

SO23-13-18, "Reactor Protection System Failure"

SO23-2-5, "Circulating Water System Operations"

SO23-5-1.7, "Power Operations"

SO23-12-4, "Steam Generator Tube Rupture," Revision 18

SO23-13-14, "Reactor Coolant Leak," Revision 7

SO23-13-22, "Loss of Control Room Annunciators"

Exam Group Guidelines:

EGG-001, “Licensed Operator Examination Security Process”
EGG-002, “Requalification Exam Bank Maintenance”
EGG-003, “Licensed Operator Requalification Exam Sample Plan Development”
EGG-004, “Licensed Operator Exam Project Plan Development”
EGG-005, “Exam Records Management”
EGG-006, “Biennial Written Exam Process”
EGG-007, “Proctoring Requirements for Licensed Operator Biennial Written Examinations”
EGG-008, “Annual Walkthrough Examination Process”
EGG-009, “Dynamic Examination Process”
EGG-010, “Developing/ Revising Written Exam Questions”
EGG-011, “Developing/ Revising, Modifying JPMs”
EGG-012, “Revising, Modifying Dynamic Scenarios”
EGG-013, “Periodic Examination Process”

Section 1R12: Maintenance Effectiveness

ARs

050301896
050701479

MOs

05061658000
05080056001

Miscellaneous

Charging Pump Packing Presentation conducted December 2, 2005

Component Health Report for Third Quarter 2005

System Health Report for Third Quarter 2005

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

ARs

050901037

MOs

05091319000

Section 1R15: Operability Evaluations

Procedures

SO23-12-3, "Loss of Coolant Accident," Revision 9

SO23-12-11, "EOI Supporting Attachments," Revision 3

ARs

981100757 051000543 031100614-83 050601287 050601117
050801538 050600184 050500488

Calculations

M-0012-01D, "NPSH of ESF Pumps," Revision 2

Miscellaneous

Framtome ANP, Inc. memorandum to file, "SONGS Pressurizer Heater - Warm Zone 2520670"

Palo Verde Nuclear Generating Station Unit 3 archived operator logs for June 15, 2005

Section 1R19: Postmaintenance Testing

Procedures

SO123-XXVI-6.14, "Circuit and Calibration Tests," Revision 3

ARs

050901041

Construction Work Orders

05050377
05091248

Work Authorization Record

3-0501184

Section 1R22: Surveillance Testing

Procedures

SO23-3-3.37, "Reactor Coolant System Water Inventory Balance," Revision 20

SO23-II-1.1.2, "Surveillance Requirement, Plant Protection System, Channel B," Revision 6

SO23-13-18, "Reactor Protection System Failure/Loss of Vital Bus," Revision 6

SO123-XV-27, "On-The-Job Training and Task Performance Evaluation Program," Revision 8

SO123-I-1.3, "Work Activity Guidelines," Revision 12

ARs

051000550 051101370 051200354

MOs

05090911

Miscellaneous

Pre-job Brief Checklist for 2L032 PPS Channel B Surveillance Test

Section 2OS1: Access Control to Radiologically Significant Areas

ARs

040500671 040600347 040900994 041000969 041001030 041002167
041002473 041100704 041100840 041201065 05041196 050600837
050600956 050700067 050900396 050901089 0510000146

Audits and Self-Assessments

Health Physics/Radiation Protection Audit, SCES-015-05, dated July 5, 2005

Health Physics Division Self-Assessment Report for the First Quarter 2004, SO123-SA-1, Self-Assessment Order, dated May 12, 2004

Health Physics Division Self-Assessment Report for the Second Quarter 2004, SO123-SA-1, Self-Assessment Order, dated July 29, 2004

Health Physics Division Self-Assessment Report for the Third Quarter 2004, SO123-SA-1, Self-Assessment Order, dated October 29, 2004

Health Physics Division Self-Assessment Report for the Fourth Quarter 2004, SO123-SA-1, Self-Assessment Order, dated January 31, 2005

Health Physics Division Self-Assessment Report for the First Quarter 2005, SO123-SA-1, Self-Assessment Order, dated April 29, 2005

Health Physics Division Self-Assessment Report for the Second Quarter 2005, SO123-SA-1, Self-Assessment Order, dated July 29, 2005

Procedures

SO123-VII-20, "Health Physics Program," Revision 10

SO123-VII-20.9, "Radiological Surveys," Revision 6

SO123-VII-20.10, "Radiological Work Planning and Controls," Revision 9

SO123-VII-20.10.3, "Health Physics Work Control Plans," Revision 2

SO123-VII-20.10.9, "Removal of Objects from Contaminated Pools," Revision 3

SO123-VII-20.11, "Access Control," Revision 8

SO123-VII-20.11.1, "Radiological Posting," Revision 7

Section 2OS2: ALARA Planning and Controls

ARs

011001150	021201298	040401674	040601564	040900959	040901781
040901838	040901896	041000050	041001414	041001372	041101194
041101205	041101549	050101597	050201047	050201749	050300480
050300923	050301537	050301565	050600945	050601175	050700044
050701229	050800633	050800638	050801699	050901256	050901257
051001252	051100521				

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Health Physics Division Self-Assessment Report for the Third Quarter 2005, SO123-SA-1, Self-Assessment Order, dated October 31, 2005

Health Physics Division Self-Assessment Report for the First Quarter 2004, SO123-SA-1, Self-Assessment Order, dated May 12, 2004

Health Physics Division Self-Assessment Report for the Second Quarter 2004, SO123-SA-1, Self-Assessment Order, dated July 29, 2004

Health Physics Division Self-Assessment Report for the Third Quarter 2004, SO123-SA-1, Self-Assessment Order, dated October 29, 2004

Health Physics Division Self-Assessment Report for the Fourth Quarter 2004, SO123-SA-1, Self-Assessment Order, dated January 31, 2005

Procedures

SO123-GHP-1, "Radiation Protection Program for Unborn Children," Revision 6

SO123-XX-1 ISS2, "Action Request/Maintenance Order Initiation and Processing," Revision 16

SO123-VII-20, "Health Physics Program," Revision 10

SO123-VII-20.4, "ALARA Program," Revision 3

SO123-VII-20.4.1, "ALARA Design Change Reviews," Revision 3

SO123-VII-20.4.3, "ALARA Job Reviews," Revision 4

SO123-VII-20.9, "Radiological Surveys," Revision 6

SO123-VII-20.10, "Radiological Work Planning and Controls," Revision 9

SO123-VII-20.10.3, "Health Physics Work Control Plans," Revision 2

SO123-VII-20.11, "Access Control," Revision 8

SO123-VII-20.11.1, "Radiological Posting," Revision 7

Miscellaneous Documents

ALARA Committee Meeting 1st Quarter, 2005
ALARA Committee Meeting 2nd Quarter, 2005
ALARA Committee Meeting 3rd Quarter, 2005

Section 4AO5: Other Activities

Miscellaneous Documents

Part 72, Inspection Number 072-00041/05-001

LIST OF ACRONYMS

AHSM	Advanced Horizontal Storage Mondules
ALARA	as low as is reasonable achievable
AR	Action Request
CAP	corrective action program
CCW	component cooling water
CFR	*Code of Federal Regulations*
ECU	emergency cooling unit
GTCC	Greater Than Class C
HRA	high radiation area
I&C	Instrumentation and Control
ISFSI	Independent Spent Fuel Storage Installation
LER	Licensee Event Report
MO	maintenance order
MSIS	Main Steam Isolation System
NCV	noncited violation
OJT	On-The-Job Training
PARS	Publicly Available Records
PPS	Plant Protection System
SSC	structure, system, and component
SWC	saltwater cooling
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report