

March 25, 2008

Mr. Richard M. Rosenblum  
Senior Vice President and  
Chief Nuclear Officer  
Southern California Edison Company  
San Onofre Nuclear Generating Station  
P.O. Box 128  
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3 -  
ISSUANCE OF AMENDMENTS RE: REVISE TS SR 3.3.7.3.B, "LOSS OF  
VOLTAGE FUNCTION," FOR LOSS OF VOLTAGE SIGNAL RELAY  
REPLACEMENT (TAC NOS. MD5112 AND MD5113)

Dear Mr. Rosenblum:

The Commission has issued the enclosed Amendment No. 217 to Facility Operating License No. NPF-10 and Amendment No. 209 to Facility Operating License No. NPF-15 for San Onofre Nuclear Generating Station, Units 2 and 3, respectively. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated March 30, 2007, as supplemented by letters dated November 5, 2007, and January 15 and February 19, 2008.

The amendments revise TS Surveillance Requirement 3.3.7.3.b, "Loss of Voltage Function," to a narrower voltage band and lower operating time for channel calibration testing, as a result of replacing certain undervoltage relays.

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

N. Kalyanam, Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosures: 1. Amendment No. 217 to NPF-10  
2. Amendment No. 209 to NPF-15  
3. Safety Evaluation

cc w/encls: See next page

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cc w/encls: See next page

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(\*\*) See previous concurrence

**ADAMS Accession No(s).** PKG ML080600056, Amdt. ML080600150, License/TS Pages ML080600162 (\*) SE input memo date

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/DE/EEEE*	NRR/DE/EICB*	OGC - NLO w/comments	NRR/LPL4/BC
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DATE	3/6/08	3/6/08	1/22/08	2/29/08	3/12/08	3/25/08

OFFICIAL RECORD COPY

San Onofre Nuclear Generating Station  
Units 2 and 3

(December 2007)

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SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

DOCKET NO. 50-361

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 217  
License No. NPF-10

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Southern California Edison Company, et al. (SCE or the licensee), dated March 30, 2007, as supplemented by letters dated November 5, 2007, and January 15 and February 19, 2008, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C(2) of Facility Operating License No. NPF-10 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 217, are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented in the next refueling outage or unit outage of sufficient duration, whichever occurs first.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Thomas G. Hiltz, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility  
Operating License and  
Technical Specifications

Date of Issuance: March 25, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 217

FACILITY OPERATING LICENSE NO. NPF-10

DOCKET NO. 50-361

Replace the following pages of the Facility Operating License No. NPF-10 and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License

REMOVE

INSERT

- 3 -

- 3 -

Technical Specifications

REMOVE

INSERT

3.3-34

3.3-34

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

DOCKET NO. 50-362

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 209  
License No. NPF-15

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Southern California Edison Company, et al. (SCE or the licensee), dated March 30, 2007, as supplemented by letters dated November 5, 2007, and January 15 and February 19, 2008, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.C(2) of Facility Operating License No. NPF-15 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 209, are hereby incorporated in the license. Southern California Edison Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented in the next refueling outage or unit outage of sufficient duration, whichever occurs first.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Thomas G. Hiltz, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Facility  
Operating License and  
Technical Specifications

Date of Issuance: March 25, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 209

FACILITY OPERATING LICENSE NO. NPF-15

DOCKET NO. 50-362

Replace the following pages of the Facility Operating License No. NPF-15 and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License

REMOVE

INSERT

- 3 -

- 3 -

Technical Specifications

REMOVE

INSERT

3.3-34

3.3-34

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 217 TO FACILITY OPERATING LICENSE NO. NPF-10  
AND AMENDMENT NO. 209 TO FACILITY OPERATING LICENSE NO. NPF-15  
SOUTHERN CALIFORNIA EDISON COMPANY  
SAN DIEGO GAS AND ELECTRIC COMPANY  
THE CITY OF RIVERSIDE, CALIFORNIA  
SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3  
DOCKET NOS. 50-361 AND 50-362

1.0 INTRODUCTION

By application dated March 30, 2007, as supplemented by letters dated November 5, 2007, and January 15 and February 19, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML070930597, ML073120082/ML073120083, ML080160509, and ML080520364, respectively), Southern California Edison Company (the licensee) requested changes to the Technical Specifications (TS) for San Onofre Nuclear Generating Station (SONGS), Units 2 and 3. The supplemental letters dated November 5, 2007, and January 15 and February 19, 2008, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on April 24, 2007 (72 FR 20385).

The amendment revises the TS Surveillance Requirement (SR) 3.3.7.3.b, "Loss of Voltage Function," in TS 3.3.7, "Diesel Generator - Undervoltage Start," instrumentation as follows:

- Revise the operating range from " $\geq 3554$  Volts (V) and  $\leq 3796$  V" to " $\geq 3644.89$  V and  $\leq 3694.52$  V."
- Revise the time delay from " $\geq 0.75$  seconds and  $\leq 1.0$  seconds at 0 V with initial voltage at 115.5 V" to " $\geq 0.69$  seconds and  $\leq 1.0$  seconds at 57 V with initial voltage at 115.5 V."

The change revises TS SR 3.3.7.3.b, "Loss of Voltage Function" to a narrower voltage band and lower operating time for channel calibration testing, as a result of replacing certain undervoltage relays.

## 2.0 EVALUATION

### 2.1 INSTRUMENTATION AND CONTROL

#### 2.1.1 Regulatory Evaluation

The NRC staff used the following regulatory bases and guidance documents in its evaluation of the license amendment request:

- 10 CFR Part 50 includes NRC's requirement that TSs shall be included by applicants for a license authorizing operation of a production or utilization facility. 10 CFR 50.36 (d) requires that TSs include items in five specific categories related to station operation. These categories are (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operations (LCOs);(3) surveillance requirements (SRs); (4) design features; and (5) administrative controls.
- Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36, "Technical specifications," states "[e]ach applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this section." Specifically, 10 CFR 50.36(d)(1)(ii)(A) states "[w]here a limiting safety system setting is specified for a variable on which a safety limit has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded." Furthermore, 10 CFR 50.36(d)(3) states "[s]urveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."
- 10 CFR Part 50, Appendix A, "General Design Criteria [GDC] for Nuclear Power Plants," GDC Criterion 13, "Instrumentation and Control," requires, in part, that the instrumentation be provided to monitor variables and systems over their anticipated ranges for normal operation, ..., and that controls be provided to maintain these variables and systems within prescribed operating ranges.
- 10 CFR Part 50, Appendix A, GDC 20, "Protection System Functions," requires, in part, that the protection system be designed to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded.
- Regulatory Guide (RG) 1.105, Revision 3, "Setpoints for Safety-Related Instrumentation," describes a method acceptable to the staff for complying with the NRC's regulations for ensuring that setpoints for safety-related instrumentation are initially within and remain within the TS limits. The RG endorses Part I of ISA [Instrumentation, Systems, and Automatic Society]-S67.04-1994, "Setpoints for Nuclear Safety Instrumentation," subject To the NRC staff clarifications.
- NRC Regulatory Issue Summary (RIS) 2006-17, "Staff Position on the Requirements of 10 CFR 50.36, 'Technical Specifications,' Regarding Limiting Safety System Settings

[LSSS] During Periodic Testing and Calibration of Instrument Channels,” dated August 24, 2006 (ADAMS Accession No. ML051810077) addresses the NRC’s requirements on LSSS assessed during periodic testing and calibration of instrumentation. This RIS discusses issues that could occur during testing of LSSS and which, therefore, may have an adverse effect on equipment operability.

- Letter from Patrick L. Hilland, NRC, to NEI [Nuclear Energy Institute] Setpoint Methods Task Force, “Technical Specification for Addressing Issues Related to Setpoint Allowable Values,” dated September 7, 2005 (ADAMS Accession No. ML052500004). This letter addresses the footnotes that should be added to the SR related to setpoint verification surveillance for instrument functions on which a safety limit (SL) has been placed and the information to be included to ensure operability of the instruments following surveillance tests related to instrument setpoints.
- Letter from Bruce A. Boger, NRC, to Alexander Marion, NEI, “Instrumentation, Systems, and Automatic Society (ISA) S67.04 Methods for Determining Trip Setpoints and Allowable Values for Safety-Related Instrumentation,” dated August 23, 2005 (ADAMS Accession No. ML051660447).
- Letter from James A. Lyons, NRC, to Alexander Marion, NEI, “Instrumentation, Systems and Automation Society S67.04 Methods for Determining Trip Setpoints and Allowable Values for Safety-Related Instrumentation,” dated March 31, 2005 (ADAMS Accession No. ML050870008).

### 2.1.2 Technical Evaluation

The licensee is replacing the current Loss of Voltage Signal (LOVS) relays with faster relays to reduce their operating time. In response to an NRC staff request for additional information (RAI) the licensee provided:

- (1) Engineering Change Notice (ECN) A42166 to SCE Calculation No. E4C-098, Revision 3, 4 kV [kilovolt] Switchgear Protective Relay Setting,
- (2) Calculation No. E4C-098,
- (3) Calculation E4C-130, ECN A47480, TLU [total loop uncertainty] Calculation for Undervoltage Relay Circuit at Class 1E 4 kV Switchgear, and
- (4) Calculation E4C-015, ECP No. 010400749, Revision 16, and JS-123-103C, Revision 4, Instrument Setpoint/Loop Accuracy Methodology.

Furthermore, in response to the NRC staff RAI and subsequent conference calls, the licensee recalculated the setpoints. In the revised calculation, E4C-015 (plant ECP and Revision No. 010400749-16) submitted with its supplemental letter dated November 5, 2007, the licensee assumed: (1) a voltage drift value of  $\pm 0.476$  percent (resulting in voltage TLU of  $+0.918$  percent /  $-0.935$  percent with acceptable as-found tolerance of  $\pm 0.673$  percent), and (2) a time drift value of  $\pm 6.5$  percent (resulting in time TLU of  $\pm 9.21$  percent with acceptable as-found tolerance of  $\pm 9.09$  percent) because drift values were not available from the relay

manufacturer. The calculation states that the as-left and as-found values of the relay Dropout (DO) and Pickup (PU) values must be taken within 6 months of operation at the new setpoints. All data taken shall be forwarded to Engineering for analysis. If any allowable value is exceeded during this interval, Engineering will evaluate the assumptions and calibration methodology. The calculation states that the implementation of the requirements will be tracked by AR (i.e., Corrective Action Report) 010400749-37. By letter dated November 5, 2007, the licensee committed, “[a]s identified in Section 2.2.5 of Attachment 2 to Enclosure 2, SCE commits to measuring ‘As-Found’ and ‘As-Left’ data for relay Dropout and Pickup values within six months of operation at the new setpoints.”

The licensee has used square root of the sum of the squares of the variables for the independent variables and numerical sums for the dependent variables. In Section 1.4 of the calculation E4C-015, the licensee stated that a 95 percent probability at 95 percent confidence level as endorsed by RG 1.105 is used. The licensee has used the acceptable as-found bound as the Allowable Value (AV). Following are the relevant data from the calculation E4C-05:

Voltage Settings

<u>Item</u>	<u>Value in Voltage</u>
Maximum Relay DO	3721.81
Maximum Relay PU	3703.26
Allowable Value PU	3694.52
Nominal Value DO	3688.06
Nominal Value PU	3669.71
Minimum Relay DO	3653.81
Allowable Value PU	3644.89
Minimum Relay PU	3635.46
TLU	+ 0.918 percent, - 0.935 percent
AV Tolerance (As-found)	± 0.673 percent
As-Left Tolerance	± 0.476 percent

Time Delay Settings in Seconds

Minimum AV	≥ 0.69
Nominal AV	0.76
Maximum AV	≤ 1.0
Minimum As-Left	0.71
Maximum As-left	0.81

In response to the NRC staff request for additional information, by letter dated November 5, 2007, the licensee stated that the proposed TS changes are not SL-related because the voltage on Class 1E buses provides a support function to SL-related components, but does not trigger any function in the Engineered Safety Features Activation Systems (ESFAS) or the Reactor Protection System (RPS). The NRC staff concurs with this justification and agrees that there is

no need to add the two footnotes to the TS for the revised setpoints as specified in the NRC letter dated September 7, 2005.

By letter dated November 5, 2007, the licensee provided Test Procedure SO2-II-11.A(B)-2 which provides the details of SR performed every 24 months to verify the as-found relay settings and adjust the relay settings within the as-left values provided in the setpoint calculations. The licensee also stated that the inoperable or degraded channels are entered into the plant corrective action program per plant procedures (1) SO 123-I-1.3, Work Activity Guidelines, and (2) SO 123-0-A5, TS Limiting Condition for Operation Action Requirement/Equipment Deficiency Mode Restraint. In addition, by letter dated February 19, 2008, the licensee provided the following commitments:

- If the as-found relay setpoint (trip setpoint, TSP) is conservative with respect to the Allowable Value but outside its predefined as-found acceptance criteria band, then the relay shall be evaluated to verify that it is functioning as required before returning the relay (channel) to service. If the as-found relay setpoint is not conservative with respect to the Allowable Value, the relay shall be declared inoperable.
- The relay setpoint shall be reset to a value that is within the as-left tolerance of the nominal relay setpoint; otherwise, the relay shall be declared inoperable.
- If the as-found trip setpoint (TSP) is found to be non-conservative with respect to the allowable value (AV) specified in the Technical Specifications (TSs), the relay shall be declared inoperable and the associated TS action statement followed.
- If the as-found TSP is found to be conservative with respect to the AV, and outside the as-found predefined acceptance criteria band, but SCE is able to determine that the relay is functioning as required and can be reset to within the setting tolerance of the limiting TSP, or a value more conservative than the limiting TSP, then the relay may be considered operable. If it cannot be determined that the relay is functioning as required, it shall be declared inoperable and the associated TS actions followed.
- If the as-found TSP is outside the as-found predefined acceptance criteria band, the condition shall be entered into the corrective action program for further evaluation.

The NRC staff finds that the first paragraph of the above commitments conforms to Note 1, the second paragraph to Note 2, and the remaining paragraphs to the last three clauses in Section 4 of the NRC letter dated September 7, 2005. As stated earlier, for this relay, the licensee has used the acceptable as-found limit as the AV which implies that the above commitments should be implemented with the AV being same as the acceptable as-found band.

Based on the above evaluation, the NRC staff finds the above commitments to the plant procedures acceptable.

### 2.1.3 Summary

The NRC staff finds that the proposed TS changes do not trigger any ESFAS or the RPS and, therefore, is not SL-related; therefore, the footnotes specified in the NRC letter dated September 7, 2005, need not be added to the proposed TS changes. Furthermore, the methodology for calculating the setpoints conform to RG 1.105, the RIS 2006-17, and the NRC letter dated September 7, 2005. In addition, the licensee committed to perform SR that conform to the NRC letter dated September 7, 2005. Based on the above, the NRC staff finds the TS changes listed in Section 1.0 acceptable.

Additionally, the NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the regulatory commitments are best provided by the licensee's administrative processes, including its commitment management program. The regulatory commitments do not warrant the creation of regulatory requirements (items requiring prior NRC approval of subsequent changes).

## 2.2 ELECTRICAL AND DISTRIBUTION

### 2.2.1 Regulatory Evaluation

Title 10 of the *Code of Federal Regulations* (10 CFR) Appendix A of Part 50, GDC 17, "Electric Power Systems," requires, in part, that nuclear power plants have onsite and offsite electric power systems to permit the functioning of structures, systems, and components that are important to safety. The onsite system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure. Electric power from the transmission network to the onsite electric distribution system is required to be supplied by two physically independent circuits that are designed and located so as to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. In addition, this criterion requires provisions to minimize the probability of losing electric power from the remaining electric power supplies as a result of a loss of power from the unit, the offsite transmission network, or the onsite power supplies.

### 2.2.2 Technical Evaluation

#### 2.2.2.1 Current Design

Each 4.16 kV Class 1E bus is equipped with undervoltage relays to permit automatic transfer to the alternate preferred power source and for diesel generator (DG) starting. For loss of voltage protection, four undervoltage relays are provided on each 4.16 kV Class 1E bus. The output contact of the relays are combined in a two-out-of-four logic to generate an LOVS with a time delay of approximately 1 second for complete loss of voltage. LOVS performs the following:

- LOVS with a Safety Injection Actuation Signal (SIAS) will transfer the 4.16 kV Class 1E bus to the standby power source;
- LOVS without SIAS will transfer the 4.16 kV Class 1E bus to the alternate preferred power source if available. If the alternate power source is not available it will transfer 4.16 kV bus to the standby power source.

Currently, SR 3.3.7.3.b, "Loss of Voltage Function," states the allowable channel calibration range is  $\geq 3554$  V and  $\leq 3796$  V and time delay is  $\geq 0.75$  seconds and  $\leq 1.0$  seconds at 0 V.

SR 3.3.7.3.b and SR 3.8.1.11.c.1 (AC [Alternating Current] Systems – Operating) verify that the system responds properly and starts the DG including resetting the 4.16 kV bus undervoltage relay logic within the 10-second time limit. During surveillance testing, both the dropout voltage, at which the relay actuates upon sensing the loss of voltage, and the pickup voltage, at which the relay resets to enable sequencing of loads on the bus, are measured. The design calculations assume that to meet the SR, the LOVS relays will actuate within 0.6 seconds followed by DG starting within the subsequent 9.4 seconds. Although the LOVS relays actuate slower than the 0.6 seconds assumed in the calculation, this does not render the LCO not met since the SR only surveils the total specified 10-second limit, the sum of the LOVS relay actuation time plus DG start time. The DG start time is sufficiently faster than the assumed 9.4 seconds and thus, the system has always met the SR limit.

SONGS will replace the LOVS relays with a faster relay to reduce the operating time of the relays. Thus, the proposed modification will provide additional conservatism for starting the DG and resetting the 4.16 kV bus LOVS scheme within the 10-second timing limit from the loss of preferred power.

#### 2.2.2.2 Proposed Modification

The proposed modification will reduce the actuation time of the LOVS scheme and provide additional conservatism for the startup of the DG. All 16 of the existing Westinghouse CV-2 undervoltage relays installed on the 4.16 kV safety-related buses in both SONGS Units 2 and 3 will be replaced with Basler BE1-27 electronic undervoltage relays. The proposed allowable "loss of voltage function" channel calibration values are  $\geq 3644.89$  V and  $\leq 3694.52$  V, with a time delay from  $\geq 0.69$  seconds to  $\leq 1.0$  second (voltage change from 115.5 V to 57 V). The LOVS channel consists of an LOV relay and auxiliary relays connected in series. The time delay of the entire LOVS channel up to and including the auxiliary relays is  $\leq 1.0$  second. Attachment 2 of the November 5, 2007, letter provides the calculation to determine the operating time range of the BE1-27 relays, considering the operating time (10 cycles) of the auxiliary relays. In its January 15, 2008, letter, the licensee stated that the inverse time curves for the BE1-27 relay were generated with prefault voltages at 10 percent higher than pickup. The prefault voltage, 115.5V, is 110 percent of the LOV relay pickup setting of 105 V. The manufacturer's curves show that the lowest voltage is 57 V, derived by  $105 \text{ V} - 48 \text{ V}$ , as shown in the manufacturer's relay curves provided in the January 15, 2008, letter. The licensee stated that the allowable time delay in the proposed TS is measured when the voltage changes from 115.5 V to 57 V. Thus, the 115.5 V initial voltage is selected based on the available manufacturer's relay curves, which provides the specific time at 57 V when voltage is dropped from 115.5 V.

As stated in the licensee's November 5, 2007, letter, the criteria for determining the voltage and time delay setpoints of the LOVS relay include the following:

- (1) The time delay of the BE1-27 relay should be selected such that the time delay of the entire LOVS channel up to and including the associated auxiliary relays is less than or equal to 1.0 second as required by SR 3.3.7.3.b.
- (2) The LOV scheme should not actuate on a voltage dip during load sequencing or the largest motor starting.
- (3) Since Class 1E motors (460 V and 4.16 kV) are capable of sustained satisfactory operation with a voltage dip to 75 percent of rated voltage for 15 seconds, the LOV relay should operate within 15 seconds at 75 percent of the rated motor voltage.
- (4) The minimum operating voltage of the LOV relay should be greater than the voltage at the Class 1E 4.16 kV buses corresponding to 75 percent of the rated switchyard voltage of 230 kV.

The NRC staff requested that the licensee confirm that the LOVS relay will not spuriously trip during the starting of the largest motor concurrent with low grid voltage. Enclosure 2 of the November 5, 2007, letter discusses that the minimum voltage dip at a Class 1E 4.16 kV bus during load sequencing is either (1) higher than the LOV relay pickup voltage when the preferred offsite power source is supplying the bus, or (2) the voltage dip is lower than the minimum relay pickup voltage but recovers before the relay time delay when the DG is supplying the bus. The NRC staff finds this response acceptable.

The safety function of the LOVS relay is to ensure operability of safety-related equipment. The proposed change allows the continued operation while the 4.16 kV safety buses switch over to the DG in the event of a loss of voltage from the preferred power supplies. The licensee evaluated the DG starting time and resetting time for the 4.16 kV bus undervoltage relays within the required 10-second timing from the loss of preferred power source. Thus, SONGS 2 and 3 continue to meet GDC 17.

### 2.2.3 Summary

Based on the above evaluation, the NRC staff concludes that the proposed change to SONGS TS SR 3.3.7.3.b are consistent with SONGS' compliance with the applicable regulations; therefore, the proposed changes are acceptable.

## 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the California State official was notified of the proposed issuance of the amendment. The State official had no comments.

## 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The

Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on April 24, 2007 (72 FR 20385). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

## 5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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