

April 8, 1994

Mr. Brian Woods
Southern California Edison Company
23 Parker Street
Irvine, CA 92718

Dear Mr. Woods:

Enclosed are NRC staff comments to Sections 3.4, 3.8 and 3.9 of the San Onofre technical specifications (TS) (TAC #'s 86191 & 86192, and Dockets 50-361 & 50-362). If necessary, after you review these comments we can arrange to meet to discuss them.

The NRC staff suggests that SCE renumber the LCOs so that there is no gap or unused number. This is to avoid operator confusion.

Changes to Surveillance Requirement frequencies from 18 to 24 months (corresponding to refueling intervals), should be checked for compliance with Generic Letter 91-04 (Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle).

Sincerely,

Original Signed By

T. R. Tjader, Reactor Engineer
Technical Specifications Branch
Division of Operating Reactor Support
Office Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Enclosure: As stated

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in cursive script, appearing to read "T. R. Tjader".

T. R. Tjader, Reactor Engineer
Technical Specifications Branch
Division of Operating Reactor Support
Office Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

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COMMENTS ON SCE STS SUBMITTAL
FOR SAN ONOFRE 2 & 3

SPECIFICATION 3.4.1, RCS Pressure, Temperature, and Flow Limits:

1) The RCS total flow rate values are relocated to the COLR. Since there is no justification provided and flow rate values are in the STS, these values should be retained. Flow rates, within the existing Tech Spec bands, are not cycle specific.

2) A Note has been added stating that cold leg temperature limits do not apply when rated thermal power is less than or equal to 30%. Justification is stated to be that it is SONGS specific (Difference Category B2). The technical basis was not presented, however, existing LCO 3/4.2.6 Applicability did limit applicability for cold leg temperature limits to less than 30% RTP. A discussion of this exception is needed in the Bases. This change was not made to the LCOs in Attachments D and E LCO revisions.

3) SR 3.4.1.4 and associated Bases have been deleted. The change is not adequately justified, i.e., SONGS justifies the deletion by stating that this SR is not in the current Bases. Normally, the flow is back calculated for verification and calibration purposes, and the STS should be followed.

4) The titles for LCOs 3.4.1 and 3.4.3 are very similar and might cause confusion. Perhaps the title for 3.4.1 should be changed (to, for instance, "Pressurizer Pressure, Cold Leg Temperature, and Flow Limits").

SPECIFICATION 3.4.2, RCS Minimum Temperature for Criticality:

1) References to T-average have been replaced with cold leg temperature. A D1 Category, Plant Specific Design, change. While this seems to make sense, it needs to be justified, considering that the existing SONGS TS refer to T_{AV} .

2) The Applicability statement that limits T_{AV} to $\geq 520^{\circ}\text{F}$ when $k_{eff} \geq 1.0$ has been changed. The justification category is D1. This justification is inadequate.

3) The required temperature verification within 15 minutes before achieving criticality, that is in the STS and in the existing SONGS TS, has been eliminated. The justification category is D1. This should not be changed, since the purpose is to avoid going critical with the temperature too low.

SPECIFICATION 3.4.3.1, Pressurizer Heatup and Cooldown Limits:

1) The Bases consists of a very minimal Background discussion with other Bases sections not included. The Bases are inadequate and need to be written with the required content in the prescribed format.

SPECIFICATION 3.4.6, RCS Loops - Mode 4:

1) The Bases discussion for Note 2 in the LCO statement deletes the 285°F cold leg temperature required to start an idle RCP and replaces it with the "LTOP enable temperature specified in the PTLR". The technical justification is not adequate.

SPECIFICATION 3.4.7, RCS Loops - Mode 5, Loops Filled:

1) In the LCO Statement, Note 4 has been changed from prohibiting the starting an idle RCP if a cold leg temperature is $\leq 285^{\circ}\text{F}$, to \leq "LTOP" enable temperature". This lacks technical justification.

2) In the LCO Statement, a new Note 5 (Insert C) permits SONGS to use a containment spray pump in place of a low pressure safety injection pump if the reactor has been subcritical for 24 hours and the RCS is fully depressurized and vented. This is justified by SONGS as a B2, Plant Specific Design change. It is permitted in the existing SONGS TS via a footnote, however, that footnote is followed by a parenthetical statement that states "Subsequent to implementation of DCP 2-6863". The status and justification of allowing this pump substitution should be clarified.

3) Consider consolidating insert A (LCO paragraph a). It can be written more concisely by combining sentences 1 & 2, and sentences 3 & 4.

4) Condition B and Required Action B.2 has been changed and reference to operability deleted. These deletions are not justified, and do not conform to the STS method of stating operability requirements.

SPECIFICATION 3.4.9, Pressurizer:

1) In the LCO section of the Bases, the discussion of the derivation of design values for heater capacity has been deleted. This deletion is justified by SONGS as a plant specific design difference, and rather than be deleted should be made applicable to SONGS.

SPECIFICATIONS 3.4.12.1 and 3.4.12.2, LTOP System:

1) In the Applicability of 3.4.12.1, Note 1 is new and is not addressed in the Bases (Note 2 in 3.4.12.2 Applicability). Justify this Note and include in the Bases.

2) The Frequency and the wording of SR 3.4.12.1.4 should be revised. This SR is only to be performed if a pair of SDCS Relief Isolation Valves are inoperable (in action statement D). As written, this SR would be performed every 12 hours whenever the applicability of this LCO exists.

3) Condition statement D is clumsy. It should be written more concisely.

4) In the Bases section on Applicable Safety Analysis, the discussion

on the SDC System relief valve performance is confusing. A better explanation is needed to clarify the design relationship of isolation valves and valve pairs, their configuration, and how they are operated to isolate the relief valve.

SPECIFICATION 3.4.13, RCS Operational Leakage:

1) In SR 3.4.13.1, a phrase has been added to the Frequency Note to clarify what to do regarding the requirement to take an inventory balance, if a transient occurs when the inventory is due. No justification was provided. Why isn't the 1.25 SR extension allowed in SR 3.0.2 ($72 \times 1.25 = 90$) sufficient?

SPECIFICATION 3.4.14, RCS PIV Leakage:

1) Table 3.4.14-1 is not mentioned in the Bases. Should this table be in the UFSAR?

2) In the Background section of the Bases, the statement identifying the listing of the UFSAR section is deleted. Apparently this information is available in several sections and should be referenced.

SPECIFICATION 3.4.15, Leakage Detection Instrumentation:

1) The A.1 Required Action of the STS, in the Attachment C markup, is not included, possibly because the STS step imposes an SR inventory Frequency of 24 hours, and it is routinely done every 72 hours anyway. This deletion is not adequately justified, and the step should be reinserted.

2) The Frequency for performing SR 3.4.15.3 & 4, the Channel Functional Test of the gaseous and particulate monitors, is changed from the STS value of 31 days to 92 days. The justification is stated as Plant Specific Design, B2. That is not proper justification.

3) The Bases do not address the new condition C. The Required Actions and Completion Times in the Bases for Condition C are really those for Condition D of the LCO. This should be corrected.

SPECIFICATION 3.4.16, RCS Specific Activity:

1) In Required Action for Condition A, a Note is inserted stating that LCO 3.0.4 does not apply, i.e., restrictions for changing modes. No justification is provided. The reason is addressed in the Bases and this exemption only applies to an iodine spike following a plant trip. The Note needs to be modified and justified.

COMMENTS ON SCE STS SUBMITTAL
FOR SAN ONOFRE 2 & 3

SPECIFICATION 3.8.1, AC SOURCES - OPERATING:

1) The SR 3.8.1.1 note for the Unit 3 Technical Specification repeats the Unit 2 note rather than presenting the Unit 3 note provided in the NUREG-1432, Insert A, markup. The markup is quite clear that there are unit-specific differences between the two Technical Specifications at this point. The Unit 3 Technical Specifications should be changed to incorporate the correct information.

2) The licensee added to SRs 3.8.1.2 & 3, under frequency, the phrase "on a staggered test basis,." This is not per NUREG-1432 and no justification was provided. Delete this phrase.

3) In SR 3.8.1.6, '[Automatically]' was removed from the NUREG-1432 markup, yet appears in the Unit 2 and Unit 3 Technical Specifications. It should be removed from the Unit 2 and Unit 3 Technical Specifications.

4) In SR 3.8.1.9, the NUREG-1432 markup uses 681.6 kW for the load rejection. The Unit Technical Specifications use 682 kW. The existing Technical Specifications use 655.7 kW. Resolve the differences, justify any change from the existing Technical Specifications.

5) In SR 3.8.1.12, no justification was presented for deleting steps d and e that verify offsite power remains connected to permanently connected loads and the programmed time interval load sequence(r). Those steps should be restored to the unit Technical Specifications.

6) In the LCO Bases section, Bus numbers A04 (for train A) and A06 (for train B) were not carried over from the NUREG-1432 markup to the unit Technical Specification Bases. The bus numbers should be included.

7) In the SR 3.8.1.2 and SR 3.8.1.7 Bases, the last words of the sixth paragraph, 'if a modified start is not used, (the) 10 second start requirement of SR 3.8.1.7 applies,' was not transferred to the unit Technical Specifications. The words should be included here in the unit Technical Specifications or justification presented for their deletion.

SPECIFICATION 3.8.2, AC SOURCES - SHUTDOWN:

1) In the LCO Bases, the licensee deleted the last paragraph of NUREG-1432, concerning proper operation of the load sequencer, without explanation, annotation, or justification. The rationale for deleting this paragraph should be provided.

SPECIFICATION 3.8.3, DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR:

1) In the fourth paragraph of the Background Bases, the statements -- 'Each engine oil sump contains an inventory capable of supporting a minimum of

7 days of operation' and 'The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation' are conflicting. One should be used, the other deleted. It appears the second statement is correct. Also, the Bases for Condition B is in terms of inventory. Is that in terms of onsite storage, sump level, or both? What is the controlling document for keeping the diesel lube oil sump full?

2) In the SR 3.8.3.3.b Bases, phrases have been deleted because what appears in the NUREG is not in accordance with the licensing Basis unit Technical Specifications. Include the appropriate information that is in accordance with the licensing Basis.

SPECIFICATION 3.8.4, DC SOURCES OPERATING:

1) In SR 3.8.4.3, SR 3.8.4.4, and SR 3.8.4.5, the licensee changes the frequency of certain battery surveillances from the 12-months of NUREG-1432 to 24-months. The existing Technical Specifications are on a refueling basis. IEEE Standard 450 has this surveillance done on a 12-month interval as in the NUREG. The licensee should present technical justification for the extension of this surveillance interval, including any licensee controlled compensatory measures.

2) In SR 3.8.4.6, verifying the battery charger voltage at $\geq 125/250$ V (125-Vdc at San Onofre) will not demonstrate the capability to charge a battery to $\geq 129/258$ V (125-Vdc at San Onofre). The voltage specified needs to be replaced with the voltage necessary to maintain a fully charged battery. San Onofre should also make this change to their proposed Unit 2 and Unit 3 Technical Specifications accordingly.

3) In SR 3.8.4.7, Note 1, and SR 3.8.4.8, changing the battery performance test from a 60-month frequency to a 72-month frequency was done for convenience. "This change ensures the performance of SR (3.8.4.8) occurs on a refueling outage which matches with the expected 24-month refueling outage length." No technical basis for this extended interval was given. IEEE Standard 450 requires this test every 5 years (sixty months), or annually if signs of deterioration are noted, or less than 85 percent of the original capacity remains. The requirement to perform this test if signs of deterioration are noted, or less than 85 percent of the original capacity remains should be included in the Frequency of testing requirement.

We note that Regulatory Guide 1.129 states the interval between service tests should not exceed 18-months. Based on that, the 24-month interval for SR 3.8.4.7 is not acceptable. The existing Technical Specifications have a refueling interval. We also note that Regulatory Guide 1.129 states the service test should be performed in addition to the battery performance discharge test, not instead of it. However, that basis is included in the existing Technical Specifications.

Sound technical basis for deferring the battery performance discharge test to a 72-month interval should be supplied.

4) In SR 3.8.4.7 and SR 3.8.4.8, performing these tests in Modes 1, 2, 3, and 4 as proposed by the elimination of the NUREG Note, 'this surveillance

shall not be performed in Mode 1, 2, 3, or 4" will result in the battery under test becoming inoperable per Action A, SR 3.8.4.1, which requires a float voltage of ≥ 129 Vdc. Neither test can be completed and the battery recharged in less than the 2-hour completion time. No technical bases were presented for eliminating this mode restriction. The licensee should certainly **NOT** perform these tests in Mode 1 or 2. Testing in Mode 3 or 4 may be justifiable. However, no justification was provided. Therefore the elimination of the note is not acceptable.

SPECIFICATION 3.8.5, DC SOURCES-SHUTDOWN:

1) In the NUREG-1432 Bases for Required Actions A.1, A.2.1, A.2.2, A.2.3, and A.2.4, the sentence in the first paragraph that reads, "By allowing the option to declare required features inoperable with the associated DC power source(s) inoperable, ..." has been changed in the SONGS implementation of the Technical Specification to, "By allowing the option to declare inoperable required features associated with the inoperable DC power source(s), ..." No justification was presented. Revert to the NUREG version.

2) In the third paragraph of the Bases for Required Actions A.1, A.2.1, A.2.2, A.2.3, and A.2.4, the words "Sufficient DC power sources" and "minimum required DC power sources" in NUREG-1432 have been changed in the SONGS implementation of the Technical Specification to "sufficient AC vital power sources" and "minimum required AC vital power sources," respectively. No justification was provided. Revert to the NUREG version.

SPECIFICATION 3.8.6, BATTERY CELL PARAMETERS:

1) In Action B and SR 3.8.6.3 the NUREG-1432 and the new SONGS Technical Specifications read, "verify the average electrolyte temperature of representative cells is $\geq 60^{\circ}\text{F}$." The existing Technical Specifications read "the average electrolyte temperature of ten connected cells is above 60°F ." Does the term 'representative cells' encompass 'ten connected cells?' Where does the licensee define 'representative cells' and what is the definition?

2) In SR 3.8.6.3 it specifies $\geq 60^{\circ}\text{F}$. The associated BASES specifies $>60^{\circ}\text{F}$. The existing Technical Specifications read above 60°F which would indicate that SR 3.8.6.3 should be changed to $>60^{\circ}\text{F}$. Resolve this inconsistency.

3) In the Bases (with respect to Table 3.8.6-1, note c), define/describe the "Stabilized Battery Charge," and "Float Current." Discuss the associated differences between the A and B batteries and the C and D batteries, since their capacities differ. Note c discusses the acceptability of using the floating current instead of actual specific gravity testing for a maximum of 7 days after a battery recharge. The BASES indicate that this is good for 7 days after a battery equalizing charge. The Bases is in agreement with IEEE Standard 450-1987, if the battery charger is a voltage regulated charger. The submittal does not give that detail. The existing Technical Specifications do not have this note. Therefore, it appears that this technically less restrictive note has not been justified. The licensee should provide that justification. With that justification, the note should be

revised to "battery equalizing charge" instead of "battery recharge."

SPECIFICATION 3.8.7, INVERTERS - OPERATING:

1) The note associated with the LCO allows a single inverter to be disconnected from its DC bus for ≤ 24 hours for an equalizing charge under two conditions. We note that:

- a. IEEE Std 450-1987 states that an equalizing charge takes between 35 and 70 hours.
- b. Appendix D4, "Equalizing Charge," of that same standard states that "it is more often convenient to apply the equalizing charge to the individual cells" during normal float operation of the battery.

We also note the BASES allows an inverter input of up to 140-Vdc at San Onofre.

Therefore, there may be no need for this note if:

- a. the licensee can apply an equalizing charge to individual cells, or
- b. the equalizing charge voltage for the entire battery is < 140 -Vdc (at San Onofre).

The licensee should verify that the note is necessary. The licensee should verify, and document in the BASES, that 24 hours is adequate for an equalizing charge. If it is not, other provisions will have to be made to accommodate such an action. Generically, the note should be bracketed. Neither LCO 3.8.4 nor LCO 3.8.6 imposes an equalizing charge by name. Where is an equalizing charge defined and required, and what is its voltage?

SPECIFICATION 3.8.8, INVERTERS - SHUTDOWN:

1) The LCO states "inverters shall be OPERABLE." The BASES states "OPERABILITY of at least two of the four inverters and associated vital buses is required." The licensee should review this difference and determine if the LCO should be revised to more accurately reflect safety requirements. It appears that it should be revised.

2) Under Actions, the licensee deleted "it is further required to immediately initiate action to restore the required inverters and to continue this action until restoration is accomplished in order to provide the necessary inverter power to the unit safety system" from NUREG-1432, citing redundancy to the following paragraph.

The third paragraph (the following paragraph referred to in the above comment) addresses the initiation of action "to restore the minimum required AC vital power sources," not inverters. The minimum required AC vital power sources are two inverters, not four. It appears to have some confusion if the sentence addressing inverters is omitted. The licensee should clarify what AC vital power sources are to be restored.

SPECIFICATION 3.8.9, DISTRIBUTION SYSTEMS - OPERATING:

1) In the LCO Bases section the wording 'motor control center and distribution panels were struck out in the NUREG-1432 markup, yet appear in the unit Technical Specifications (change 5.c). The licensee should re-evaluate this deleted material.

2) The second Completion Times for each of the Required Actions, and the associated Bases sections, should not be deleted.

COMMENTS ON SCE STS SUBMITTAL
FOR SAN ONOFRE 2 & 3

SPECIFICATION 3.9.1, Boron Concentration:

1) In the Background section of the Bases, the words "into the open reactor vessel by gravity feeding or by the use of the shutdown cooling (SDC) system pumps" have been deleted, and not added elsewhere, without sufficient justification.

SPECIFICATION 3.9.2, Nuclear Instrumentation:

1) In the Applicability section of the Bases, reference has been changed to LCO 3.3.13, "Source Range Monitors," from LCO 3.3.2, "RPS Instrumentation-Shutdown," which has been deleted. Wouldn't it be more appropriate to reference both LCOs?

SPECIFICATION 3.9.3, Containment Penetrations:

1) In the Bases Reference section, Reference 1 has been deleted because SONGS does not use that safety analysis (justification 13). Why not? What does SONGS use in its place?

2) It is noted that SONGS has not committed to NUREG-800, performing a Fuel Handling Analysis (justification 16). Why not? NUREG-800 is referenced in the Bases for 3.9.6.

3) To adopt the BG&E change to allow both air lock doors open when performing Core Alts or fuel movements, a plant specific analysis regarding offsite dose rates needs to be conducted, to ensure compliance with 10CFR100 limits.

SPECIFICATIONS 3.9.4 AND 3.9.5, SDC and Coolant Circulation - High/Low:

1) It is not necessary to include the note pertaining to using a spray pump instead of an LP pump. Operability is defined in the Bases (and per Safety Function Determination Program).

2) It is not necessary to specify flow rate in SR 3.9.5.1. Flow rate must satisfy GDC and safety analysis requirements. It can appear in the procedures to perform the SR.

SPECIFICATION 3.9.6, Refueling Water Level:

1) Required Action A.3, to restore water level, has been deleted, since if A.1 and A.2 are performed the plant will be outside the applicability of the LCO. The importance of restoring water level is such that rather than deleting A.3, perhaps it should be made A.1. A.3 was intentionally included because of its importance, though everyone should be aware of it.