SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL Company

Brian Katz
Vice President

March 24, 2005

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: **Docket Numbers 50-361 and 50-362**
Proposed Change Number (PCN) 559
Request to Implement Technical Specification Task Force Items Related to Cycle Specific Values and Shutdown Margin
San Onofre Nuclear Generating Station Units 2 and 3

Gentlemen:

Pursuant to 10 CFR 50.90, Southern California Edison (SCE) hereby requests the following amendments to Facility Operating Licenses NPF-10 and NPF-15 for San Onofre Units 2 and 3, respectively: In Technical Specification (TS) 1.1, Definitions, correct the definition of SHUTDOWN MARGIN (SDM); in TSs 3.1.1, SHUTDOWN MARGIN (SDM) – $T_{avg} > 200°F$, and 3.1.2, SHUTDOWN MARGIN (SDM) – $T_{avg} \leq 200°F$, relocate the numerical shutdown margin requirements to the Core Operating Limits Report (COLR); in TS 3.1.3, Reactivity Balance, increase the required action time from 72 hours to 7 days when the "Core reactivity balance not within limit."; in TS 3.1.5, Control Element Assembly (CEA) Alignment, TS 3.1.6, Shutdown Control Element Assembly (CEA) Insertion Limits, and TS 3.1.7, Regulating CEA Insertion Limits, remove the requirement to verify SDM; in TS 3.2.4, Departure From Nucleate Boiling Ratio (DNBR), relocate to the COLR the power margin that must be accommodated when the Core Operating Limit Supervisory System (COLSS) is in service and neither CEA calculator is Operable; and in TS 5.7.1.5, CORE OPERATING LIMITS REPORT (COLR), identify that the limits for TSs 3.1.1 and 3.1.2 shall be in the COLR.

The proposed changes are consistent with the following Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) Standard Technical Specification Change Travelers: TSTF-9-A, Revision 1, "Relocate value for shutdown margin to COLR;" TSTF-67-A, Revision 0, "Correction of Shutdown Margin Definition;" TSTF-142-A, Revision 0, "Increase the Completion Time When the Core Reactivity Balance is Not Within Limit;" and TSTF-150-A, Revision 0, "Replace DNBR Power Decrease Number with Reference to the COLR."

The proposed changes are also consistent with the Standard Technical Specifications for Combustion Engineering Plants, NUREG-1432, Revision 3.

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A001

SCE has evaluated this request under the standards set forth in 10 CFR 50.92(c) and determined that a finding of "no significant hazards consideration" is justified.

SCE requests approval of these changes in time to support the Unit 2 Cycle 14 refueling outage, currently scheduled to begin on January 3, 2006. Also, SCE requests that these amendments be implemented within 60 days from the date of issuance.

SCE is making no new commitments that would result from NRC approval of the proposed amendments.

If you have any questions or require additional information, please contact Mr. Jack Rainsberry at (949) 368-7420.

Sincerely,

Brian Katz

Enclosures

1. Notarized Affidavits
2. Licensee's Evaluation of the Proposed Change

Attachments:

A. Existing Technical Specification pages, Unit 2
B. Existing Technical Specification pages, Unit 3
C. Markup of Technical Specification pages, Unit 2
D. Markup of Technical Specification pages, Unit 3
E. Retyped Technical Specification pages, Unit 2
F. Retyped Technical Specification pages, Unit 3

cc: B. S. Mallett, Regional Administrator, NRC Region IV
B. M. Pham, NRC Project Manager, San Onofre Units 2, and 3
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 and 3
S. Y. Hsu, Department of Health Services, Radiologic Health Branch

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. for a Class 103 License to Acquire, Possess, and Use a Utilization Facility as Part of Unit No. 2 of the San Onofre Nuclear Generating Station	)	Docket No. 50-361 Amendment Application No. 234

SOUTHERN CALIFORNIA EDISON COMPANY, et al., pursuant to 10CFR50.90, hereby submit Amendment Application No. 234. This amendment application consists of Proposed Change Number (PCN) 559 to Facility Operating License NPF-10. PCN-559 is a request to revise the following Technical Specifications (TSs): in TS 1.1, Definitions, correct the definition of SHUTDOWN MARGIN (SDM); in TSs 3.1.1, SHUTDOWN MARGIN (SDM) – T_{avg} > 200°F, and 3.1.2, SHUTDOWN MARGIN (SDM) – $T_{avg} \leq$ 200°F, relocate the numerical shutdown margin requirements to the Core Operating Limits Report (COLR); in TS 3.1.3, Reactivity Balance, increase the required action time from 72 hours to 7 days when the "Core reactivity balance not within limit."; in TS 3.1.5, Control Element Assembly (CEA) Alignment, TS 3.1.6, Shutdown Control Element Assembly (CEA) Insertion Limits, and TS 3.1.7, Regulating CEA Insertion Limits, remove the requirement to verify SDM; in TS 3.2.4, Departure From Nucleate Boiling Ratio (DNBR), relocate to the COLR the power margin that must be accommodated when the Core Operating Limit Supervisory System (COLSS) is in service and neither CEA calculator is OPERABLE; and in TS 5.7.1.5, CORE OPERATING LIMITS REPORT (COLR), identify that the limits for TSs 3.1.1 and 3.1.2 shall be in the COLR for San Onofre Nuclear Generating Station Unit 2.

State of California
County of San Diego

Brian Katz

Brian Katz, Vice President

Subscribed and sworn to (or affirmed) before me this 24TH day of

MARCH, 2005, by BRIAN KATZ,
personally known to me or proved to me on the basis of satisfactory evidence to be the person who appeared before me.

Leslie Raue

Notary Public

LESLIE RAUE
Commission # 1362446
Notary Public - California
San Diego County
My Comm. Expires Jun 25, 2006

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. for a Class 103 License to Acquire, Possess, and Use a Utilization Facility as Part of Unit No. 3 of the San Onofre Nuclear Generating Station	)	Docket No. 50-362 Amendment Application No. 218

SOUTHERN CALIFORNIA EDISON COMPANY, et al., pursuant to 10CFR50.90, hereby submit Amendment Application No. 218. This amendment application consists of Proposed Change Number (PCN) 559 to Facility Operating License NPF-15. PCN-559 is a request to revise the following Technical Specifications (TSs): in TS 1.1, Definitions, correct the definition of SHUTDOWN MARGIN (SDM); in TSs 3.1.1, SHUTDOWN MARGIN (SDM) – T_{avg} > 200°F, and 3.1.2, SHUTDOWN MARGIN (SDM) – $T_{avg} \leq$ 200°F, relocate the numerical shutdown margin requirements to the Core Operating Limits Report (COLR); in TS 3.1.3, Reactivity Balance, increase the required action time from 72 hours to 7 days when the "Core reactivity balance not within limit."; in TS 3.1.5, Control Element Assembly (CEA) Alignment, TS 3.1.6, Shutdown Control Element Assembly (CEA) Insertion Limits, and TS 3.1.7, Regulating CEA Insertion Limits, remove the requirement to verify SDM; in TS 3.2.4, Departure From Nucleate Boiling Ratio (DNBR), relocate to the COLR the power margin that must be accommodated when the Core Operating Limit Supervisory System (COLSS) is in service and neither CEA calculator is OPERABLE; and in TS 5.7.1.5, CORE OPERATING LIMITS REPORT (COLR), identify that the limits for TSs 3.1.1 and 3.1.2 shall be in the COLR for San Onofre Nuclear Generating Station Unit 3.

State of California
County of San Diego

Brian Katz

Brian Katz, Vice President

Subscribed and sworn to (or affirmed) before me this 24TH day of

MARCH, 2005, by BRIAN KATZ,
personally known to me or proved to me on the basis of satisfactory evidence to be the person who appeared before me.

Leslie Raue

Notary Public

LESLIE RAUE
Commission # 1362446
Notary Public - California
San Diego County
My Comm. Expires Jun 25, 2006

ENCLOSURE 2

LICENSEE'S EVALUATION
Proposed Change Number 559

SUBJECT: Request to Implement Technical Specification Task Force Items Related to Cycle Specific Values and Shutdown Margin

LICENSE AMENDMENT REQUEST TO IMPLEMENT TECHNICAL SPECIFICATION (TS) TASK FORCE ITEMS RELATED TO CYCLE SPECIFIC VALUES AND SHUTDOWN MARGIN (TSs 1.1, 3.1.1, 3.1.2, 3.1.3, 3.1.5, 3.1.6, 3.1.7, 3.2.4, and 5.7.1.5) San Onofre Nuclear Generating Station, Units 2 and 3

1.0 INTRODUCTION

This request is to amend Operating Licenses NPF-10 and NPF-15 for San Onofre Nuclear Generating Station (SONGS), Units 2 and 3, respectively.

The proposed change would revise the following Technical Specifications (TSs): TS 1.1, Definitions, correct the definition of SHUTDOWN MARGIN (SDM); in TSs 3.1.1, SHUTDOWN MARGIN (SDM) – $T_{avg} > 200°F$, and 3.1.2, SHUTDOWN MARGIN (SDM) – $T_{avg} \leq 200°F$, relocate the numerical shutdown margin requirements to the Core Operating Limits Report (COLR); in TS 3.1.3, Reactivity Balance, increase the required action time from 72 hours to 7 days when the "Core reactivity balance not within limit."; in TS 3.1.5, Control Element Assembly (CEA) Alignment, TS 3.1.6, Shutdown Control Element Assembly (CEA) Insertion Limits, and TS 3.1.7, Regulating CEA Insertion Limits, remove the requirement to verify SDM; in TS 3.2.4, Departure From Nucleate Boiling Ratio (DNBR), relocate to the COLR the power margin that must be accommodated when the Core Operating Limit Supervisory System (COLSS) is in service and neither CEA calculator is OPERABLE; and in TS 5.7.1.5, CORE OPERATING LIMITS REPORT (COLR), identify that the limits for TSs 3.1.1 and 3.1.2 shall be in the COLR.

2.0 DESCRIPTION OF PROPOSED AMENDMENT

This proposed change is to revise the TSs as follows:

1. TS 1.1 Definitions

   SHUTDOWN MARGIN (SDM):

   a. Delete part "b," and change the identifier for "c" to "b."

   b. Move the following sentence from the end of the SDM definition to the end of part a. of the SDM definition: "With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM." Also, add the word "and" at the end of this sentence.

2. TS 3.1.1 SHUTDOWN MARGIN (SDM) $-T_{avg} > 200^{\circ}$ F

   a. Revise Limiting Condition for Operation (LCO) 3.1.1 from "SDM shall be $\geq$ 5.15% Δk/k." to "SDM shall be within the limits specified in the COLR."

   b. Revise Surveillance Requirement (SR) 3.1.1.2 from "Verify SDM is $\geq$ 5.15% Δk/k." to "Verify SDM to be within the limits specified in the COLR."

3. TS 3.1.2 SHUTDOWN MARGIN (SDM) $-T_{avg} \leq 200^{\circ}$ F

   a. Revise LCO 3.1.2 from "SDM shall be $\geq$ 3.0% Δk/k." to "SDM shall be within the limits specified in the COLR."

   b. Revise SR 3.1.2.1 from "Verify SDM is $\geq$ 3.0% Δk/k." to "Verify SDM to be within the limits specified in the COLR."

4. TS 3.1.3 Reactivity Balance

   Increase the Completion Times for Required Actions A.1 and A.2 from 72 hours to 7 days.

5. TS 3.1.5 Control Element Assembly (CEA) Alignment, TS 3.1.6 Shutdown Control Element Assembly (CEA) Insertion Limits, and TS 3.1.7 Regulating CEA Insertion Limits

   Delete the Required Action and associated Completion Time of 1 hour to "Verify SDM is $\geq$ 5.15% Δk/k. OR Initiate boration to restore SDM to within limit." in TS 3.1.5 Required Actions A.2.1, A.2.2, B.2.1, and B.2.2; TS 3.1.6 Required Actions A.1.1 and A.1.2; and TS 3.1.7 Required Actions A.1.1, A.1.2, D.1.1, and D.1.2. Also, renumber the remaining Required Actions as needed.

6. TS 3.2.4 Departure From Nucleate Boiling Ratio (DNBR)

   In LCO 3.2.4.b replace "13.0% RTP" with "the allowance specified in the COLR."

7. TS 5.7.1.5 CORE OPERATING LIMITS REPORT (COLR)

   a. Add the following to TS 5.7.1.5 as items a.1. and a.2. and renumber existing Items a.1. through a.8. to a.3. through a.10.:

      i. Specification 3.1.1, "SHUTDOWN MARGIN (SDM) – $T_{avg} > 200^{\circ}$F;"

      ii. Specification 3.1.2, "SHUTDOWN MARGIN (SDM) – $T_{avg} \leq 200^{\circ}$F;"

   b. Add the following at the end of existing section 5.7.1.5.6.c: (Methodology for Specifications 3.1.1 and 3.1.2 for Shutdown Margin)

EXISTING TECHNICAL SPECIFICATIONS:

Unit 2: See Attachment A
Unit 3: See Attachment B

PROPOSED TECHNICAL SPECIFICATIONS
(Additions highlighted and deletions struck-out)

Unit 2: See Attachment C
Unit 3: See Attachment D

PROPOSED TECHNICAL SPECIFICATIONS (with changes)

Unit 2: See Attachment E
Unit 3: See Attachment F

3.0 BACKGROUND

This change is to update the San Onofre Units 2 and 3 Technical Specifications to be consistent with NUREG-1432, Revision 3, "Standard Technical Specifications for Combustion Engineering (CE) Plants" (Reference 1), based on the following NRC approved Technical Specification Task Force (TSTF) travelers (References 2 through 5):

a. TSTF-9 — Relocate the TS 3.1.1 and 3.1.2 numerical shutdown margin requirements to the COLR. Note that TSTF-9 and TSTF-67 affect some of the same Technical Specification items. In these cases, the revised text has been based on the more recent TSTF-67.

b. TSTF-67 — Update the TS 1.1 definition of shutdown margin, and remove the requirement to verify SDM from TSs 3.1.5, 3.1.6, and 3.1.7. Note that TSTF-67 includes changes to the Section 3.1 Special Test Exceptions (STE). These STE changes are not applicable to SONGS, due to the wording used in the SONGS STE. Also note that some of the TSTF-67 changes superseded the changes made by TSTF-9.

c. TSTF-142 — Increase the TS 3.1.3 required action completion time from 72 hours to 7 days when the core reactivity balance is not in agreement with the predicted values.

d. TSTF-150 — Relocate to the COLR the TS 3.2.4 power margin that must be accommodated when COLSS is in service and neither CEA Calculator (CEAC) is OPERABLE.

The following Table compares the proposed wording to the wording in both the TSTF item and the current Standard Technical Specifications (NUREG-1432, Rev. 3, Reference 1).

TS Item	TS Page	TSTF	Change Consistent With TSTF?	Change Consistent With NUREG-1432, Rev. 3?
1.1	1.1-6	67	Yes	Yes (NUREG item 1.1)
3.1.1	3.1-1	9	Yes	Yes (NUREG item 3.1.1). Note that the NUREG item addresses all Reactor Coolant System (RCS) temperatures, while SONGS has separate entries for high and low RCS temperatures.
3.1.2	3.1-2	9	Yes	Yes (NUREG item 3.1.1). Note that the NUREG item addresses all RCS temperatures, while SONGS has separate entries for high and low RCS temperatures.
3.1.3	3.1-3	142	Yes	Yes (NUREG item 3.1.2)
3.1.5	3.1-7 3.1-8	67	Yes. There are minor differences due to slight differences in the SONGS licensing basis. (See Section 4.)	Yes (NUREG item 3.1.4). There are minor differences due to slight differences in the SONGS licensing basis. (See Section 4.)
3.1.6	3.1-12	67	Yes.	Yes (NUREG item 3.1.5).
3.1.7	3.1-14 3.1-15 3.1-16	67	Yes.	Yes (NUREG item 3.1.6).
3.2.4	3.2-9	150	Yes.	Yes (NUREG item 3.2.4).
5.7.1.5	5.0-26 5.0-29	N/A	N/A. The update to the COLR administrative TS is not specifically described in the TSTFs that relocate items to the COLR.	Yes (NUREG item 5.6.5). SONGS TS 5.7.1.5.b. provides more specific information.

4.0 TECHNICAL ANALYSIS

TS 1.1

As described and approved in TSTF-67 (Reference 3), the current definition of "SHUTDOWN MARGIN" is incorrect. Specifically, paragraph b. of the definition states "In MODES 1 and 2, the fuel and moderator temperatures are changed to the corrected hot zero power condition." Under the Combustion Engineering (CE) core design methodology, the changes in fuel and moderator temperatures are included in the determination of the Control Element Assembly (CEA) Power Dependent Insertion Limit (PDIL), which is used to ensure adequate shutdown margin in MODES 1 and 2. The requirements on CEAs are given in paragraphs a., c., and the last paragraph of the current TS 1.1 SHUTDOWN MARGIN definition. As documented in the NRC approved SONGS reload analysis methodology (Reference 6), SONGS uses the CE core design methodology. Therefore, TSTF-67 is applicable to SONGS. The proposed wording and format are identical to NUREG-1432, Rev. 3, Section 1.1.

TSs 3.1.1 and 3.1.2

Relocating the cycle dependent Shutdown Margin to the COLR is consistent with NRC approved TSTF-9 (Reference 2). The Limiting Conditions of Operation (LCOs) and COLR will continue to ensure that adequate shutdown margin is maintained. Appropriate analyses will continue to be performed in accordance with NRC approved SONGS reload analysis methodology (Reference 6) to ensure that all design basis events have acceptable results. The proposed wording is identical to NUREG-1432, Rev. 3, Specification 3.1.1. (Note that the SONGS Technical Specifications split the SDM specification into a high and low temperature specification, while NUREG-1432, Rev. 3 has a single specification that applies to all temperatures. Separate SDM specifications for high and low temperatures are maintained to minimize the impact on existing plant procedures.)

TS 3.1.3

Increasing the required Completion Time from 72 hours to 7 days is consistent with NRC approved TSTF-142 (Reference 4). The Actions when core reactivity balance is not within the limit require a reevaluation of core design and safety analysis, determination if the reactor core is acceptable for continued operation, and the establishment of appropriate operating restrictions and SRs within 72 hours. Evaluating a predicted versus measured reactivity anomaly is very complex. Data would need to be gathered, evaluated, and appropriate controls put in place based on the data. If Boron-10 depletion may be a contributing factor, an RCS sample would likely be drawn and sent to an offsite laboratory for analysis. It would be difficult to complete all of these actions in 72 hours. It is important to allow sufficient time to properly analyze the causes of a reactivity anomaly. The proposed 7-day period is sufficient time to properly analyze the causes. The proposed 7-day Completion Time

is acceptable because of the conservatisms used in designing the reactor core and performing the safety analyses, and the low probability of a design basis accident or anticipated transient approaching the core design limits occurring during the 7-day period. The proposed wording is identical to NUREG-1432, Rev. 3, Specification 3.1.2.

TS 3.1.5

Removing the requirements to verify shutdown margin and initiate boration is consistent with NRC approved TSTF-67 (Reference 3). Per the discussion for TS 1.1, for plants using the CE core design methodology, the assurance of shutdown margin in Modes 1 and 2 is based solely on CEAs. When CEAs are inoperable, calculating Shutdown Margin, as required in many Actions, is inappropriate for CE plants. Specifically, CEA alignment and insertion specifications that have Actions that require verification of Shutdown Margin and, if needed, boration, are incorrect for CE plants. If the CEAs are above the PDIL, there is adequate Shutdown Margin. If not, restoring the CEAs to within their limits will restore the Shutdown Margin. Under the CE core design methodology, boration is not an appropriate action to restore shutdown margin. As documented in the NRC approved SONGS reload analysis methodology (Reference 6), SONGS uses the CE core design methodology. Therefore, TSTF-67 is applicable to SONGS.

The proposed wording has minor differences with NUREG-1432, Rev. 3, Specification 3.1.4, due to minor differences in the current SONGS licensing basis. The current SONGS TSs include separate conditions for each type of CEA (regulating, shutdown, and part-length), while NUREG-1432 has a single condition that applies to all CEAs. Additionally, the SONGS specific alignment criteria differ from the generic criteria in NUREG-1432. The SONGS TSs also require any misaligned regulating or shutdown CEA to be trippable. Additionally, NUREG-1432 Figure 3.1.4-1 contains the power reduction requirements, while at SONGS the power reduction requirements have already been relocated to the SONGS COLR. The SONGS TSs require initiation of the power reduction within 15 minutes, with the completion time as specified in the COLR. NUREG-1432 does not specify a starting time for the initiation of the power reduction, and specifies a completion time of 1 hour.

TSs 3.1.6 and 3.1.7

Removing the requirements to verify shutdown margin and initiate boration is consistent with NRC approved TSTF-67 (Reference 3). Per the discussion for TS 1.1, for plants using the CE core design methodology, the assurance of shutdown margin in Modes 1 and 2 is based solely on CEAs. When CEAs are inoperable, calculating Shutdown Margin, as required in many Actions, is inappropriate for CE plants. Specifically, CEA alignment and insertion specifications that have Actions that require verification of Shutdown Margin and, if needed, boration, are incorrect for CE plants. If the CEAs are above the PDIL, there is adequate Shutdown Margin. If not, restoring the CEAs to within their limits will restore the Shutdown Margin. Under the CE core design methodology, boration is not an

appropriate action to restore shutdown margin. As documented in the NRC approved SONGS reload analysis methodology (Reference 6), SONGS uses the CE core design methodology. Therefore, TSTF-67 is applicable to SONGS. The proposed wording is consistent with NUREG-1432, Rev. 3, Specifications 3.1.5 and 3.1.6.

TS 3.2.4

Relocating the numerical value for decreasing the COLSS core power operating limit based on DNBR when COLSS is in service and neither CEAC is OPERABLE is consistent with NRC approved TSTF-150 (Reference 5). Limiting Condition of Operation (LCO) 3.2.4.b requires that the COLSS core power operating limit based on DNBR be decreased by 13% rated thermal power (RTP) when COLSS is in service and neither CEAC is OPERABLE. This specific value is replaced with a reference to the COLR. The decrease in the power operating limit based on DNBR is a cycle-specific value. Therefore, this information fits the criteria for relocation to the COLR. Relocating the numerical value for decreasing the COLSS core power operating limit based on DNBR to the COLR is acceptable because the LCOs and COLR will continue to ensure that the appropriate COLSS penalty value is maintained during plant operation. Appropriate analyses will continue to be performed in accordance with the NRC approved SONGS reload analysis methodology (Reference 6) to ensure that all design basis events have acceptable results. The proposed wording is identical to NUREG-1432, Rev. 3, Specification 3.2.4.

TS 5.7.1.5

The change to this specification is administrative in nature, as it merely adds Specifications 3.1.1 and 3.1.2 to the list of specifications which have their limits specified in the COLR (note that Specification 3.2.4 is already listed in TS 5.7.1.5).

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

Southern California Edison (SCE) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. **Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?**

   Response: No.

   The Limiting Conditions of Operation (LCOs) and Core Operating Limits Report (COLR) will continue to restrict operation to within the regions that provide acceptable results. The safety analysis will continue to be performed in

accordance with the Nuclear Regulatory Commission (NRC) approved San Onofre Units 2 and 3 reload analysis methodology.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?**

Response: No.

The proposed change does not add any new equipment, modify any interfaces with any existing equipment, alter the equipment's function, or change the method of operating the equipment. The proposed change does not alter plant conditions in a manner that could affect other plant components. The proposed change does not cause any existing equipment to become an accident initiator.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. **Does the proposed change involve a significant reduction in a margin of safety?**

Response: No.

Safety Limits ensure that Specified Acceptable Fuel Design Limits are not exceeded during steady state operation, normal operational transients, and anticipated operational occurrences. All fuel limits and design criteria will continue to be met, based on the NRC approved San Onofre Units 2 and 3 reload analysis methodology. Therefore, the proposed change will have no impact on the margins as defined in the Technical Specification bases.

Therefore, this change does not involve a significant reduction in a margin of safety.

Based on the above, SCE concludes that the proposed, amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

The request to relocate the proposed values of cycle specific parameters to the COLR is based on the Nuclear Regulatory Commission (NRC) Generic Letter (GL) 88-16, "Removal of Cycle-Specific Parameter Limits From Technical Specifications." The conditions of GL 88-16 are met as follows: 1) The COLR is defined in Technical Specification (TS) 5.7.1.5 and the COLR includes the values of cycle-specific parameter limits that have been established using an NRC-

approved methodology and consistent with all applicable limits of the safety analysis, 2) An administrative reporting requirement to submit the COLR (including cycle-specific parameter limits) to the NRC for information is in TS 5.7.1.5.d, and 3) The individual TSs (TS 3.1.1 SHUTDOWN MARGIN (SDM) – $T_{avg} > 200°F$, TS 3.1.2 SHUTDOWN MARGIN (SDM) $-T_{avg} \leq 200°F$, and TS 3.2.4 for Departure From Nucleate Boiling Ratio) are being modified to note that cycle specific parameters shall be maintained within the limits provided in the COLR.

The proposed changes are consistent with NUREG 1432, Revision 3, "Standard Technical Specifications for Combustion Engineering Plants," and with Technical Specification Task Force (TSTF) Change Travelers as follows:

The proposed revisions to TS 1.1 Definitions to correct the definition of shutdown margin (SDM) and the proposed revisions to TS 3.1.5 Control Element Assembly (CEA) Alignment, TS 3.1.6 Shutdown Control Element Assembly (CEA) Insertion Limits, and TS 3.1.7 Regulating CEA Insertion Limits, to delete the requirements to verify shutdown margin and initiate boration are based on TSTF-67-A, Revision 0, "Correction of Shutdown Margin Definition."

The proposed revisions to relocate cycle specific values to the COLR in TS 3.1.1 SHUTDOWN MARGIN (SDM) $-T_{avg} > 200°F$and TS 3.1.2 SHUTDOWN MARGIN (SDM) $-T_{avg} \leq 200°F$, and TS 3.2.4 Departure From Nucleate Boiling Ratio (DNBR) are based on TSTF-9-A, Revision 1, "Relocate value for shutdown margin to COLR." The proposed revisions to relocate the cycle specific value to the COLR in TS 3.2.4 Departure From Nucleate Boiling Ratio (DNBR) is based on TSTF-150-A, Revision 0, "Replace DNBR Power Decrease Number with Reference to the COLR." The COLR process reduces the burden on the licensees and the NRC from processing changes to cycle-specific parameter limits in TSs for each fuel cycle, provided the limits are developed using an NRC-approved methodology. The NRC-approved methodology for calculation of SDM and the DNBR Power Decrease Number is SCE-9801-P-A, "Reload Analysis Methodology for the San Onofre Nuclear Generating Station Units 2 and 3" (Reference 6).

The proposed revision to TS 3.1.3 Reactivity Balance to increase the required action time from 72 hours to 7 days when the core reactivity balance is not in agreement with the predicted values is based on TSTF-142-A, Revision 0, "Increase the Completion Time When the Core Reactivity Balance is Not Within Limit."

6.0 PRECEDENCE

1. By letter dated September 25, 2003 the NRC issued Amendment No. 280 to Facility Operating License No. DPR-65, approving a request by submittal dated August 14, 2002, as supplemented on March 11, May 16, and May 23, 2003, from Dominion Nuclear Connecticut, Inc. for Millstone

Power Station, Unit No. 2. This amendment implemented TSTF-67 to delete the requirement to verify shutdown margin upon determination of inoperable or misaligned CEAs. This amendment also implemented TSTF-142 to increase the Completion Time from 72 hours to 7 days to re-evaluate the core design and safety analysis if the reactor core reactivity balance is not within the limit.

2. By a letter dated March 9, 2004 the NRC issued Amendment No. 218 to Facility Operating License No. NPF-49, approving a request by submittals dated April 7, 2003 and September 18, 2003 from Dominion Nuclear Connecticut, Inc. for Millstone Power Station, Unit No. 3 implemented TSTF-9 to relocate some Technical Specification parameters to the COLR.

3. By letter dated March 23, 2004 the NRC issued Amendment No. 96 to the Seabrook Facility Operating License No. NPF-86, approving a request from North Atlantic Energy Service Corporation for Seabrook Station, Unit 1, dated April 15, 2002, to relocate cycle-specific Technical Specification parameters to the COLR.

4. NUREG-1432, Revision 3, "Standard Technical Specifications for Combustion Engineering Plants."

5. TSTF-9-A, Revision 1, "Relocate value for shutdown margin to COLR."

6. TSTF-67-A, Revision 0, "Correction of Shutdown Margin Definition."

7. TSTF-142-A, Revision 0, "Increase the Completion Time When the Core Reactivity Balance is Not Within Limit."

8. TSTF-150-A, Revision 0, "Replace DNBR Power Decrease Number with Reference to the COLR."

7.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendments would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendments do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendments meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environment impact statement or environmental assessment need be prepared in connection with these proposed amendments.

8.0 REFERENCES:

1. NUREG-1432, Revision 3, "Standard Technical Specifications for Combustion Engineering Plants."

2. TSTF-9-A, Revision 1, "Relocate value for shutdown margin to COLR."

3. TSTF-67-A, Revision 0, "Correction of Shutdown Margin Definition."

4. TSTF-142-A, Revision 0, "Increase the Completion Time When the Core Reactivity Balance is Not Within Limit."

5. TSTF-150-A, Revision 0, "Replace DNBR Power Decrease Number with Reference to the COLR."

6. SCE-9801-P-A, "Reload Analysis Methodology for the San Onofre Nuclear Generating Station Units 2 and 3," June 1999

7. NRC Generic Letter 88-16, "Removal of Cycle-Specific Parameter Limits From Technical Specifications," dated October 3, 1988.

PCN-559

Attachment A

EXISTING TECHNICAL SPECIFICATIONS UNIT 2

1.1 Definitions

Shutdown margin (SDM) (continued)	a. All full length CEAs (shutdown and regulating) are fully inserted except for the single CEA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all CEAs verified fully inserted by two independent means, it is not necessary to account for a stuck CEA in the SDM calculation. b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the corrected hot zero power condition. c. There is no change in part length CEA position. With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM) – T_{avg} > 200°F

LCO 3.1.1 SDM shall be ≥ 5.15% Δk/k.

APPLICABILITY: MODES 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM is acceptable with increased allowance for the withdrawn worth of inoperable CEAs.	1 hour after detection of inoperable CEA(s) and every 12 hours thereafter
SR 3.1.1.2	Verify SDM is ≥ 5.15% Δk/k.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 SHUTDOWN MARGIN (SDM) – T_{avg} ≤ 200°F

LCO 3.1.2 SDM shall be ≥ 3.0% Δk/k.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.2.1 Verify SDM is ≥ 3.0% Δk/k.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Reactivity Balance

LCO 3.1.3 The core reactivity balance shall be within ± 1% $\Delta k/k$ of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Core reactivity balance not within limit.	A.1	Re-evaluate core design and safety analysis and determine that the reactor core is acceptable for continued operation.	72 hours
	AND		
	A.2	Establish appropriate operating restrictions and SRs.	72 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Element Assembly (CEA) Alignment

LCO 3.1.5 All full length CEAs shall be OPERABLE and all full and part length CEAs shall be aligned to within 7 inches of all other CEAs in its group.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One regulating CEA trippable and misaligned from its group by > 7 inches.	A.1	Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND		
	A.2.1	Verify SDM is ≥ 5.15% Δk/k.	1 hour
	OR		
	A.2.2	Initiate boration to restore SDM to within limit.	1 hour
	AND		
	A.3.1	Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours
	OR		

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.3.2	Align the remainder of the CEAs in the group to within 7 inches of the misaligned CEA(s) while maintaining the insertion limit of LCO 3.1.7, "Regulating Control Element Assembly (CEA) Insertion Limits."	2 hours
B. One shutdown CEA trippable and misaligned from its group by > 7 inches.	B.1	Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND		
	B.2.1	Verify SDM is ≥ 5.15% Δk/k.	1 hour
	OR		
	B.2.2	Initiate boration to restore SDM to within limit.	1 hour
	AND		
	B.3	Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours

(continued)

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Shutdown Control Element Assembly (CEA) Insertion Limits

LCO 3.1.6 All shutdown CEAs shall be withdrawn to ≥ 145 inches.

APPLICABILITY: MODE 1,
MODE 2 with any regulating CEA not fully inserted.

----------NOTE----------
This LCO is not applicable while performing SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more shutdown CEA(s) not within limit.	A.1.1	Verify SDM ≥ 5.15% Δk/k.	1 hour
	OR		
	A.1.2	Initiate boration to restore SDM to within limit.	1 hour
	AND		
	A.2	Restore shutdown CEA(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Regulating CEA Insertion Limits

LCO 3.1.7 The power dependent insertion limit (PDIL) alarm circuit shall be OPERABLE, and

a. With the Core Operating Limit Supervisory System (COLSS) in service, the regulating CEA groups shall be limited to the withdrawal sequence, insertion limits, and associated time restraints specified in the COLR.

b. With COLSS out of service, the regulating CEA groups shall be limited to the short term steady state insertion limit and associated time restraints specified in the COLR.

APPLICABILITY: MODES 1 and 2.

----------NOTE----------
This LCO is not applicable while conducting SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating CEA groups inserted beyond the transient insertion limit with COLSS in service.	A.1.1 Verify SDM ≥ 5.15% Δk/k.	1 hour
	OR	
	A.1.2 Initiate boration to restore SDM to within limit.	1 hour
	AND	
	A.2.1 Restore regulating CEA groups to within limits.	2 hours
	OR	

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by the CEA group position and insertion limits specified in the COLR.	2 hours
B. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for > 4 hours per 24 hour interval with COLSS in service.	B.1	Verify short term steady state insertion limits are not exceeded.	15 minutes
	OR		
	B.2	Restrict increases in THERMAL POWER to ≤ 5% RTP per hour.	15 minutes
C. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for intervals > 5 effective full power days (EFPD) per 30 EFPD interval or > 14 EFPD per 365 EFPD interval with COLSS in service.	C.1	Restore regulating CEA groups to within limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Regulating CEA groups inserted beyond the short term steady state insertion limit with COLSS out of service.	D.1.1	Verify SDM ≥ 5.15% Δk/k.	1 hour
	OR		
	D.1.2	Initiate boration to restore SDM to within limit.	1 hour
	AND		
	D.2.1	Restore regulating CEA groups to within limits.	2 hours
	OR		
	D.2.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by CEA group position and short term steady state insertion limit specified in the COLR.	2 hours
E. PDIL alarm circuit inoperable.	E.1	Perform SR 3.1.7.1.	1 hour AND Once per 4 hours thereafter
F. Required Actions and associated Completion Times not met.	F.1	Be in MODE 3.	6 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.4 Departure From Nucleate Boiling Ratio (DNBR)

LCO 3.2.4 The DNBR shall be maintained by one of the following methods:

a. Maintaining Core Operating Limit Supervisory System (COLSS) calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR (when COLSS is in service, and either one or both control element assembly calculators (CEACs) are OPERABLE);

b. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR decreased by 13.0% RTP (when COLSS is in service and neither CEAC is OPERABLE);

c. Operating within limits as specified in the COLR using any operable core protection calculator (CPC) channel (when COLSS is out of service and either one or both CEACs are OPERABLE); or

d. Operating within limits as specified in the COLR using any operable CPC channel (when COLSS is out of service and neither CEAC is OPERABLE).

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With COLSS in service and the COLSS calculated core power exceeding the COLSS calculated core power operating limit.	A.1 Restore the DNBR to within limit.	1 hour

(continued)

5.7 Reporting Requirements (continued)

5.7.1.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience, including documentation of all challenges to pressurizer safety valves, shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Attention: Document Control Desk, Washington, D.C., with a copy to the Regional Administrator of the Regional Office of the NRC, no later than the 15th of each month following the calendar month covered by the report.

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1. Specification 3.1.4, "Moderator Temperature Coefficient;"

2. Specification 3.1.5, Control Element Assembly (CEA) Alignment;"

3. Specification 3.1.7, "Regulating CEA Insertion Limits;"

4. Specification 3.1.8, "Part Length Control Element Assembly Insertion Limits;"

5. Specification 3.2.1, "Linear Heat Rate;"

6. Specification 3.2.4, "Departure From Nucleate Boiling Ratio;"

7. Specification 3.2.5, "Axial Shape Index;"

8. Specification 3.9.1, "Boron Concentration."

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

1.a.1 Letter, dated September 5, 1985, M. O. Medford (SCE) to G. W. Knighton (NRC), "Docket No. 50-361 and 50-362 Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 3)

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

6.b "Identification of NRC Safety Evaluation Report Limitations and/or Constraints on Reload Analysis Methodology," CEN-635(S), Rev. 00, February 1999

6.c Letter, Stephen Dembek (NRC) to Harold B. Ray (SCE), dated June 2, 1999, "San Onofre Nuclear Generating Station Units 2 and 3 - Evaluation of Reload Analysis Methodology Technology Transfer (TAC Nos. MA4289 and MA4290)"

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal hydraulic limits, Emergency Core Cooling System (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.7.1.6 Not Used

5.7.1.7 Hazardous Cargo Traffic Report

Hazardous cargo traffic on Interstate 5 (I-5) and the AT&SF railway shall be monitored and the results submitted to the NRC Regional Administrator once every three years.

(continued)

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Attachment B

EXISTING TECHNICAL SPECIFICATIONS UNIT 3

1.1 Definitions

SHUTDOWN MARGIN (SDM) (continued)	a. All full length CEAs (shutdown and regulating) are fully inserted except for the single CEA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all CEAs verified fully inserted by two independent means, it is not necessary to account for a stuck CEA in the SDM calculation. b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the corrected hot zero power condition. c. There is no change in part length CEA position. With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM) – T_{avg} > 200°F

LCO 3.1.1 SDM shall be ≥ 5.15% Δk/k.

APPLICABILITY: MODES 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM is acceptable with increased allowance for the withdrawn worth of inoperable CEAs.	1 hour after detection of inoperable CEA(s) and every 12 hours thereafter
SR 3.1.1.2	Verify SDM is ≥ 5.15% Δk/k.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 SHUTDOWN MARGIN (SDM) – T_{avg} ≤ 200°F

LCO 3.1.2 SDM shall be ≥ 3.0% Δk/k.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.2.1 Verify SDM is ≥ 3.0% Δk/k.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Reactivity Balance

LCO 3.1.3 The core reactivity balance shall be within ± 1% $\Delta k/k$ of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Core reactivity balance not within limit.	A.1	Re-evaluate core design and safety analysis and determine that the reactor core is acceptable for continued operation.	72 hours
	AND		
	A.2	Establish appropriate operating restrictions and SRs.	72 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Element Assembly (CEA) Alignment

LCO 3.1.5 All full length CEAs shall be OPERABLE and all full and part length CEAs shall be aligned to within 7 inches of all other CEAs in its group.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One regulating CEA trippable and misaligned from its group by > 7 inches.	A.1	Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND		
	A.2.1	Verify SDM is ≥ 5.15% Δk/k.	1 hour
	OR		
	A.2.2	Initiate boration to restore SDM to within limit.	1 hour
	AND		
	A.3.1	Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours
	OR		
			(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.3.2	Align the remainder of the CEAs in the group to within 7 inches of the misaligned CEA(s) while maintaining the insertion limit of LCO 3.1.7, "Regulating Control Element Assembly (CEA) Insertion Limits."	2 hours
B. One shutdown CEA trippable and misaligned from its group by > 7 inches.	B.1	Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND		
	B.2.1	Verify SDM is ≥ 5.15% Δk/k.	1 hour
	OR		
	B.2.2	Initiate boration to restore SDM to within limit.	1 hour
	AND		
	B.3	Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours

(continued)

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Shutdown Control Element Assembly (CEA) Insertion Limits

LCO 3.1.6 All shutdown CEAs shall be withdrawn to ≥ 145 inches.

APPLICABILITY: MODE 1,
MODE 2 with any regulating CEA not fully inserted.

----------NOTE----------
This LCO is not applicable while performing SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more shutdown CEA(s) not within limit.	A.1.1	Verify SDM ≥ 5.15% Δk/k.	1 hour
	OR		
	A.1.2	Initiate boration to restore SDM to within limit.	1 hour
	AND		
	A.2	Restore shutdown CEA(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Regulating CEA Insertion Limits

LCO 3.1.7 The power dependent insertion limit (PDIL) alarm circuit shall be OPERABLE, and

a. With the Core Operating Limit Supervisory System (COLSS) in service, the regulating CEA groups shall be limited to the withdrawal sequence, insertion limits, and associated time restraints specified in the COLR.

b. With COLSS out of service, the regulating CEA groups shall be limited to the short term steady state insertion limit and associated time restraints specified in the COLR.

APPLICABILITY: MODES 1 and 2.

----------NOTE----------
This LCO is not applicable while conducting SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating CEA groups inserted beyond the transient insertion limit with COLSS in service.	A.1.1 Verify SDM ≥ 5.15% Δk/k. OR	1 hour
	A.1.2 Initiate boration to restore SDM to within limit. AND	1 hour
	A.2.1 Restore regulating CEA groups to within limits. OR	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by the CEA group position and insertion limits specified in the COLR.	2 hours
B. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for > 4 hours per 24 hour interval with COLSS in service.	B.1	Verify short term steady state insertion limits are not exceeded.	15 minutes
	<u>OR</u>		
	B.2	Restrict increases in THERMAL POWER to ≤ 5% RTP per hour.	15 minutes
C. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for intervals > 5 effective full power days (EFPD) per 30 EFPD interval or > 14 EFPD per 365 EFPD interval with COLSS in service.	C.1	Restore regulating CEA groups to within limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Regulating CEA groups inserted beyond the short term steady state insertion limit with COLSS out of service.	D.1.1	Verify SDM ≥ 5.15% Δk/k.	1 hour
	OR		
	D.1.2	Initiate boration to restore SDM to within limit.	1 hour
	AND		
	D.2.1	Restore regulating CEA groups to within limits.	2 hours
	OR		
	D.2.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by CEA group position and short term steady state insertion limit specified in the COLR.	2 hours
E. PDIL alarm circuit inoperable.	E.1	Perform SR 3.1.7.1.	1 hour AND Once per 4 hours thereafter
F. Required Actions and associated Completion Times not met.	F.1	Be in MODE 3.	6 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.4 Departure From Nucleate Boiling Ratio (DNBR)

LCO 3.2.4 The DNBR shall be maintained by one of the following methods:

a. Maintaining Core Operating Limit Supervisory System (COLSS) calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR (when COLSS is in service, and either one or both control element assembly calculators (CEACs) are OPERABLE);

b. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR decreased by 13.0% RTP (when COLSS is in service and neither CEAC is OPERABLE);

c. Operating within limits as specified in the COLR using any operable core protection calculator (CPC) channel (when COLSS is out of service and either one or both CEACs are OPERABLE); or

d. Operating within limits as specified in the COLR using any operable CPC channel (when COLSS is out of service and neither CEAC is OPERABLE).

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With COLSS in service and the COLSS calculated core power exceeding the COLSS calculated core power operating limit.	A.1 Restore the DNBR to within limit.	1 hour

(continued)

5.7 Reporting Requirements (continued)

5.7.1.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience, including documentation of all challenges to pressurizer safety valves, shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Attention: Document Control Desk, Washington, D.C., with a copy to the Regional Administrator of the Regional Office of the NRC, no later than the 15th of each month following the calendar month covered by the report.

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1. Specification 3.1.4, "Moderator Temperature Coefficient;"

2. Specification 3.1.5, Control Element Assembly (CEA) Alignment;"

3. Specification 3.1.7, "Regulating CEA Insertion Limits;"

4. Specification 3.1.8, "Part Length Control Element Assembly Insertion Limits;"

5. Specification 3.2.1, "Linear Heat Rate;"

6. Specification 3.2.4, "Departure From Nucleate Boiling Ratio;"

7. Specification 3.2.5, "Axial Shape Index;"

8. Specification 3.9.1, "Boron Concentration."

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

1.a.1 Letter, dated September 5, 1985, M. O. Medford (SCE) to G. W. Knighton (NRC), "Docket No. 50-361 and 50-362 Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 3)

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

6.b "Identification of NRC Safety Evaluation Report Limitations and/or Constraints on Reload Analysis Methodology," CEN-635(S), Rev. 00, February 1999

6.c Letter, Stephen Dembek (NRC) to Harold B. Ray (SCE), dated June 2, 1999, "San Onofre Nuclear Generating Station Units 2 and 3 - Evaluation of Reload Analysis Methodology Technology Transfer (TAC Nos. MA4289 and MA4290)"

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal hydraulic limits, Emergency Core Cooling System (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.7.1.6 Not Used

5.7.1.7 Hazardous Cargo Traffic Report

Hazardous cargo traffic on Interstate 5 (I-5) and the AT&SF railway shall be monitored and the results submitted to the NRC Regional Administrator once every three years.

(continued)

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Attachment C

PROPOSED TECHNICAL SPECIFICATIONS UNIT 2

(Additions highlighted and deletions struck-out)

1.1 Definitions

Shutdown margin (SDM) (continued)	a. All full length CEAs (shutdown and regulating) are fully inserted except for the single CEA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all CEAs verified fully inserted by two independent means, it is not necessary to account for a stuck CEA in the SDM calculation; With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM, and
	b. ~~In MODES 1 and 2, the fuel and moderator temperatures are changed to the corrected hot zero power condition.~~
	~~c.~~ There is no change in part length CEA position.
	~~With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM.~~
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM) – T_{avg} > 200°F

LCO 3.1.1 SDM shall be ~~≥ 5.15% Δk/k~~ within the limits specified in the COLR.

APPLICABILITY: MODES 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM is acceptable with increased allowance for the withdrawn worth of inoperable CEAs.	1 hour after detection of inoperable CEA(s) and every 12 hours thereafter
SR 3.1.1.2	Verify SDM ~~is ≥ 5.15% Δk/k~~ to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 SHUTDOWN MARGIN (SDM) – T_{avg} ≤ 200°F

LCO 3.1.2 SDM shall be ~~≥ 3.0% Δk/k~~within the limits specified in the COLR.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	Verify SDM ~~is ≥ 3.0% Δk/k~~to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Reactivity Balance

LCO 3.1.3 The core reactivity balance shall be within ± 1% Δk/k of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Core reactivity balance not within limit.	A.1	Re-evaluate core design and safety analysis and determine that the reactor core is acceptable for continued operation.	~~72 hours~~7 days
	AND		
	A.2	Establish appropriate operating restrictions and SRs.	~~72 hours~~7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Element Assembly (CEA) Alignment

LCO 3.1.5 All full length CEAs shall be OPERABLE and all full and part length CEAs shall be aligned to within 7 inches of all other CEAs in its group.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One regulating CEA trippable and misaligned from its group by > 7 inches.	A.1 Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	~~AND~~	
	~~A.2.1 Verify SDM is ≥ 5.15% Δk/k.~~	~~1 hour~~
	~~OR~~	
	~~A.2.2 Initiate boration to restore SDM to within limit.~~	~~1 hour~~
	AND	
	A.~~3~~2.1 Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours
	OR	
		(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.~~3~~2.2 Align the remainder of the CEAs in the group to within 7 inches of the misaligned CEA(s) while maintaining the insertion limit of LCO 3.1.7, "Regulating Control Element Assembly (CEA) Insertion Limits."	2 hours
B. One shutdown CEA trippable and misaligned from its group by > 7 inches.	B.1 Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	~~AND~~	
	~~B.2.1 Verify SDM is ≥ 5.15% Δk/k.~~	~~1 hour~~
	~~OR~~	
	~~B.2.2 Initiate boration to restore SDM to within limit.~~	~~1 hour~~
	AND	
	B.~~3~~2 Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours

(continued)

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Shutdown Control Element Assembly (CEA) Insertion Limits

LCO 3.1.6 All shutdown CEAs shall be withdrawn to ≥ 145 inches.

APPLICABILITY: MODE 1,
MODE 2 with any regulating CEA not fully inserted.

----------NOTE----------
This LCO is not applicable while performing SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more shutdown CEA(s) not within limit.	~~A.1.1~~	~~Verify SDM ≥ 5.15% Δk/k.~~	~~1 hour~~
	~~OR~~		
	~~A.1.2~~	~~Initiate boration to restore SDM to within limit.~~	~~1 hour~~
	~~AND~~		
	A.~~2~~1	Restore shutdown CEA(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Regulating CEA Insertion Limits

LCO 3.1.7 The power dependent insertion limit (PDIL) alarm circuit shall be OPERABLE, and

a. With the Core Operating Limit Supervisory System (COLSS) in service, the regulating CEA groups shall be limited to the withdrawal sequence, insertion limits, and associated time restraints specified in the COLR.

b. With COLSS out of service, the regulating CEA groups shall be limited to the short term steady state insertion limit and associated time restraints specified in the COLR.

APPLICABILITY: MODES 1 and 2.

----------NOTE----------
This LCO is not applicable while conducting SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating CEA groups inserted beyond the transient insertion limit with COLSS in service.	~~A.1.1 Verify SDM ≥ 5.15% Δk/k.~~ ~~OR~~ ~~A.1.2 Initiate boration to restore SDM to within limit.~~ ~~AND~~ A~~2~~.1 Restore regulating CEA groups to within limits. OR	~~1 hour~~ ~~1 hour~~ 2 hours (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A~~2~~.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by the CEA group position and insertion limits specified in the COLR.	2 hours
B. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for > 4 hours per 24 hour interval with COLSS in service.	B.1	Verify short term steady state insertion limits are not exceeded.	15 minutes
	OR		
	B.2	Restrict increases in THERMAL POWER to ≤ 5% RTP per hour.	15 minutes
C. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for intervals > 5 effective full power days (EFPD) per 30 EFPD interval or > 14 EFPD per 365 EFPD interval with COLSS in service.	C.1	Restore regulating CEA groups to within limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Regulating CEA groups inserted beyond the short term steady state insertion limit with COLSS out of service.	~~D.1.1 Verify SDM ≥ 5.15% Δk/k.~~ ~~OR~~ ~~D.1.2 Initiate boration to restore SDM to within limit.~~ ~~AND~~ D.~~2.~~1 Restore regulating CEA groups to within limits. OR D.~~2.~~2 Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by CEA group position and short term steady state insertion limit specified in the COLR.	~~1 hour~~ ~~1 hour~~ 2 hours 2 hours
E. PDIL alarm circuit inoperable.	E.1 Perform SR 3.1.7.1.	1 hour AND Once per 4 hours thereafter
F. Required Actions and associated Completion Times not met.	F.1 Be in MODE 3.	6 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.4 Departure From Nucleate Boiling Ratio (DNBR)

LCO 3.2.4 The DNBR shall be maintained by one of the following methods:

a. Maintaining Core Operating Limit Supervisory System (COLSS) calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR (when COLSS is in service, and either one or both control element assembly calculators (CEACs) are OPERABLE);

b. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR decreased by the allowance specified in the COLR~~13.0% RTP~~ (when COLSS is in service and neither CEAC is OPERABLE);

c. Operating within limits as specified in the COLR using any operable core protection calculator (CPC) channel (when COLSS is out of service and either one or both CEACs are OPERABLE); or

d. Operating within limits as specified in the COLR using any operable CPC channel (when COLSS is out of service and neither CEAC is OPERABLE).

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With COLSS in service and the COLSS calculated core power exceeding the COLSS calculated core power operating limit.	A.1 Restore the DNBR to within limit.	1 hour

(continued)

5.7 Reporting Requirements (continued)

5.7.1.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience, including documentation of all challenges to pressurizer safety valves, shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Attention: Document Control Desk, Washington, D.C., with a copy to the Regional Administrator of the Regional Office of the NRC, no later than the 15th of each month following the calendar month covered by the report.

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1. Specification 3.1.1, "SHUTDOWN MARGIN (SDM) - T_{avg} >200°F;"

2. Specification 3.1.2, "SHUTDOWN MARGIN (SDM) - T_{avg} ≤200°F;"

3.~~1.~~ Specification 3.1.4, "Moderator Temperature Coefficient;"

4.~~2.~~ Specification 3.1.5, Control Element Assembly (CEA) Alignment;"

5.~~3.~~ Specification 3.1.7, "Regulating CEA Insertion Limits;"

6.~~4.~~ Specification 3.1.8, "Part Length Control Element Assembly Insertion Limits;"

7.~~5.~~ Specification 3.2.1, "Linear Heat Rate;"

8.~~6.~~ Specification 3.2.4, "Departure From Nucleate Boiling Ratio;"

9~~7.~~ Specification 3.2.5, "Axial Shape Index;"

10~~8.~~ Specification 3.9.1, "Boron Concentration."

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

1.a.1 Letter, dated September 5, 1985, M. O. Medford (SCE) to G. W. Knighton (NRC), "Docket No. 50-361 and 50-362 Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 3)

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

6.b "Identification of NRC Safety Evaluation Report Limitations and/or Constraints on Reload Analysis Methodology," CEN-635(S), Rev. 00, February 1999

6.c Letter, Stephen Dembek (NRC) to Harold B. Ray (SCE), dated June 2, 1999, "San Onofre Nuclear Generating Station Units 2 and 3 - Evaluation of Reload Analysis Methodology Technology Transfer (TAC Nos. MA4289 and MA4290)"

(Methodology for Specifications 3.1.1 and 3.1.2 for Shutdown Margin)

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal hydraulic limits, Emergency Core Cooling System (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.7.1.6 Not Used

5.7.1.7 Hazardous Cargo Traffic Report

Hazardous cargo traffic on Interstate 5 (I-5) and the AT&SF railway shall be monitored and the results submitted to the NRC Regional Administrator once every three years.

(continued)

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Attachment D

PROPOSED TECHNICAL SPECIFICATIONS UNIT 3

(Additions highlighted and deletions struck-out)

1.1 Definitions

SHUTDOWN MARGIN (SDM) (continued)	a. All full length CEAs (shutdown and regulating) are fully inserted except for the single CEA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all CEAs verified fully inserted by two independent means, it is not necessary to account for a stuck CEA in the SDM calculation. With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM, and
	b. ~~In MODES 1 and 2, the fuel and moderator temperatures are changed to the corrected hot zero power condition.~~
	~~c.~~ There is no change in part length CEA position.
	~~With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM.~~
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM) – T_{avg} > 200°F

LCO 3.1.1 SDM shall be ~~≥ 5.15% Δk/k~~within the limits specified in the COLR.

APPLICABILITY: MODES 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM is acceptable with increased allowance for the withdrawn worth of inoperable CEAs.	1 hour after detection of inoperable CEA(s) and every 12 hours thereafter
SR 3.1.1.2	Verify SDM ~~is ≥ 5.15% Δk/k~~to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 SHUTDOWN MARGIN (SDM) – T_{avg} ≤ 200°F

LCO 3.1.2 SDM shall be ~~≥ 3.0% Δk/k~~within the limits specified in the COLR.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	Verify SDM ~~is ≥ 3.0% Δk/k~~to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Reactivity Balance

LCO 3.1.3 The core reactivity balance shall be within ± 1% Δk/k of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Core reactivity balance not within limit.	A.1 Re-evaluate core design and safety analysis and determine that the reactor core is acceptable for continued operation. AND A.2 Establish appropriate operating restrictions and SRs.	~~72 hours~~7 days ~~72 hours~~7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Element Assembly (CEA) Alignment

LCO 3.1.5 All full length CEAs shall be OPERABLE and all full and part length CEAs shall be aligned to within 7 inches of all other CEAs in its group.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One regulating CEA trippable and misaligned from its group by > 7 inches.	A.1 Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	~~AND~~	
	~~A.2.1 Verify SDM is ≥ 5.15% Δk/k.~~	~~1 hour~~
	~~OR~~	
	~~A.2.2 Initiate boration to restore SDM to within limit.~~	~~1 hour~~
	AND	
	A.~~3~~2.1 Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours
	OR	
		(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.~~3~~2.2 Align the remainder of the CEAs in the group to within 7 inches of the misaligned CEA(s) while maintaining the insertion limit of LCO 3.1.7, "Regulating Control Element Assembly (CEA) Insertion Limits."	2 hours
B. One shutdown CEA trippable and misaligned from its group by > 7 inches.	B.1 Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	~~AND~~	
	~~B.2.1 Verify SDM is ≥ 5.15% Δk/k.~~	~~1 hour~~
	~~OR~~	
	~~B.2.2 Initiate boration to restore SDM to within limit.~~	~~1 hour~~
	AND	
	B.~~3~~2 Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours

(continued)

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Shutdown Control Element Assembly (CEA) Insertion Limits

LCO 3.1.6 All shutdown CEAs shall be withdrawn to ≥ 145 inches.

APPLICABILITY: MODE 1,
MODE 2 with any regulating CEA not fully inserted.

----------NOTE----------
This LCO is not applicable while performing SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more shutdown CEA(s) not within limit.	~~A.1.1~~	~~Verify SDM ≥ 5.15% Δk/k.~~	~~1 hour~~
	~~OR~~		
	~~A.1.2~~	~~Initiate boration to restore SDM to within limit.~~	~~1 hour~~
	~~AND~~		
	A.~~2~~1	Restore shutdown CEA(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Regulating CEA Insertion Limits

LCO 3.1.7 The power dependent insertion limit (PDIL) alarm circuit shall be OPERABLE, and

a. With the Core Operating Limit Supervisory System (COLSS) in service, the regulating CEA groups shall be limited to the withdrawal sequence, insertion limits, and associated time restraints specified in the COLR.

b. With COLSS out of service, the regulating CEA groups shall be limited to the short term steady state insertion limit and associated time restraints specified in the COLR.

APPLICABILITY: MODES 1 and 2.

----------NOTE----------
This LCO is not applicable while conducting SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating CEA groups inserted beyond the transient insertion limit with COLSS in service.	~~A.1.1 Verify SDM ≥ 5.15% Δk/k.~~	~~1 hour~~
	~~OR~~	
	~~A.1.2 Initiate boration to restore SDM to within limit.~~	~~1 hour~~
	~~AND~~	
	A~~2~~.1 Restore regulating CEA groups to within limits.	2 hours
	OR	

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A~~2~~.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by the CEA group position and insertion limits specified in the COLR.	2 hours
B. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for > 4 hours per 24 hour interval with COLSS in service.	B.1	Verify short term steady state insertion limits are not exceeded.	15 minutes
	OR		
	B.2	Restrict increases in THERMAL POWER to ≤ 5% RTP per hour.	15 minutes
C. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for intervals > 5 effective full power days (EFPD) per 30 EFPD interval or > 14 EFPD per 365 EFPD interval with COLSS in service.	C.1	Restore regulating CEA groups to within limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Regulating CEA groups inserted beyond the short term steady state insertion limit with COLSS out of service.	~~D.1.1 Verify SDM ≥ 5.15% Δk/k.~~ ~~OR~~ ~~D.1.2 Initiate boration to restore SDM to within limit.~~ ~~AND~~ D.~~2.~~1 Restore regulating CEA groups to within limits. OR D.~~2.~~2 Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by CEA group position and short term steady state insertion limit specified in the COLR.	~~1 hour~~ ~~1 hour~~ 2 hours 2 hours
E. PDIL alarm circuit inoperable.	E.1 Perform SR 3.1.7.1.	1 hour AND Once per 4 hours thereafter
F. Required Actions and associated Completion Times not met.	F.1 Be in MODE 3.	6 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.4 Departure From Nucleate Boiling Ratio (DNBR)

LCO 3.2.4 The DNBR shall be maintained by one of the following methods:

a. Maintaining Core Operating Limit Supervisory System (COLSS) calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR (when COLSS is in service, and either one or both control element assembly calculators (CEACs) are OPERABLE);

b. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR decreased by the allowance specified in the COLR~~13.0% RTP~~ (when COLSS is in service and neither CEAC is OPERABLE);

c. Operating within limits as specified in the COLR using any operable core protection calculator (CPC) channel (when COLSS is out of service and either one or both CEACs are OPERABLE); or

d. Operating within limits as specified in the COLR using any operable CPC channel (when COLSS is out of service and neither CEAC is OPERABLE).

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With COLSS in service and the COLSS calculated core power exceeding the COLSS calculated core power operating limit.	A.1 Restore the DNBR to within limit.	1 hour

(continued)

5.7 Reporting Requirements (continued)

5.7.1.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience, including documentation of all challenges to pressurizer safety valves, shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Attention: Document Control Desk, Washington, D.C., with a copy to the Regional Administrator of the Regional Office of the NRC, no later than the 15th of each month following the calendar month covered by the report.

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1. Specification 3.1.1, "SHUTDOWN MARGIN (SDM) - T_{avg} >200°F;"

2. Specification 3.1.2, "SHUTDOWN MARGIN (SDM) - T_{avg} ≤200°F;"

~~3~~1. Specification 3.1.4, "Moderator Temperature Coefficient;"

~~4~~2. Specification 3.1.5, Control Element Assembly (CEA) Alignment;"

~~5~~3. Specification 3.1.7, "Regulating CEA Insertion Limits;"

~~6~~4. Specification 3.1.8, "Part Length Control Element Assembly Insertion Limits;"

~~7~~5. Specification 3.2.1, "Linear Heat Rate;"

~~8~~6. Specification 3.2.4, "Departure From Nucleate Boiling Ratio;"

~~9~~7. Specification 3.2.5, "Axial Shape Index;"

~~10~~8. Specification 3.9.1, "Boron Concentration."

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

1.a.1 Letter, dated September 5, 1985, M. O. Medford (SCE) to G. W. Knighton (NRC), "Docket No. 50-361 and 50-362 Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 3)

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

6.b "Identification of NRC Safety Evaluation Report Limitations and/or Constraints on Reload Analysis Methodology," CEN-635(S), Rev. 00, February 1999

6.c Letter, Stephen Dembek (NRC) to Harold B. Ray (SCE), dated June 2, 1999, "San Onofre Nuclear Generating Station Units 2 and 3 - Evaluation of Reload Analysis Methodology Technology Transfer (TAC Nos. MA4289 and MA4290)"

(Methodology for Specifications 3.1.1 and 3.1.2 for Shutdown Margin)

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal hydraulic limits, Emergency Core Cooling System (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.7.1.6 Not Used

5.7.1.7 Hazardous Cargo Traffic Report

Hazardous cargo traffic on Interstate 5 (I-5) and the AT&SF railway shall be monitored and the results submitted to the NRC Regional Administrator once every three years.

(continued)

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Attachment E

PROPOSED TECHNICAL SPECIFICATIONS UNIT 2
(with changes)

1.1 Definitions

Shutdown margin (SDM) (continued)	a. All full length CEAs (shutdown and regulating) are fully inserted except for the single CEA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all CEAs verified fully inserted by two independent means, it is not necessary to account for a stuck CEA in the SDM calculation. With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM, and b. There is no change in part length CEA position.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM) – T_{avg} > 200°F

LCO 3.1.1 SDM shall be within the limits specified in the COLR.

APPLICABILITY: MODES 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM is acceptable with increased allowance for the withdrawn worth of inoperable CEAs.	1 hour after detection of inoperable CEA(s) and every 12 hours thereafter
SR 3.1.1.2	Verify SDM to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 SHUTDOWN MARGIN (SDM) – T_{avg} ≤ 200°F

LCO 3.1.2 SDM shall be within the limits specified in the COLR.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	Verify SDM to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Reactivity Balance

LCO 3.1.3 The core reactivity balance shall be within ± 1% $\Delta k/k$ of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Core reactivity balance not within limit.	A.1	Re-evaluate core design and safety analysis and determine that the reactor core is acceptable for continued operation.	7 days
	AND		
	A.2	Establish appropriate operating restrictions and SRs.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Element Assembly (CEA) Alignment

LCO 3.1.5 All full length CEAs shall be OPERABLE and all full and part length CEAs shall be aligned to within 7 inches of all other CEAs in its group.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One regulating CEA trippable and misaligned from its group by > 7 inches.	A.1	Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND		
	A.2.1	Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours
	OR		
			(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.2	Align the remainder of the CEAs in the group to within 7 inches of the misaligned CEA(s) while maintaining the insertion limit of LCO 3.1.7, "Regulating Control Element Assembly (CEA) Insertion Limits."	2 hours
B. One shutdown CEA trippable and misaligned from its group by > 7 inches.	B.1	Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND		
	B.2	Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours

(continued)

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Shutdown Control Element Assembly (CEA) Insertion Limits

LCO 3.1.6 All shutdown CEAs shall be withdrawn to ≥ 145 inches.

APPLICABILITY: MODE 1,
MODE 2 with any regulating CEA not fully inserted.

---NOTE---
This LCO is not applicable while performing SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more shutdown CEA(s) not within limit.	A.1 Restore shutdown CEA(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Regulating CEA Insertion Limits

LCO 3.1.7 The power dependent insertion limit (PDIL) alarm circuit shall be OPERABLE, and

a. With the Core Operating Limit Supervisory System (COLSS) in service, the regulating CEA groups shall be limited to the withdrawal sequence, insertion limits, and associated time restraints specified in the COLR.

b. With COLSS out of service, the regulating CEA groups shall be limited to the short term steady state insertion limit and associated time restraints specified in the COLR.

APPLICABILITY: MODES 1 and 2.

----------NOTE----------
This LCO is not applicable while conducting SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating CEA groups inserted beyond the transient insertion limit with COLSS in service.	A.1 Restore regulating CEA groups to within limits. OR	2 hours (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by the CEA group position and insertion limits specified in the COLR.	2 hours
B. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for > 4 hours per 24 hour interval with COLSS in service.	B.1	Verify short term steady state insertion limits are not exceeded.	15 minutes
	OR		
	B.2	Restrict increases in THERMAL POWER to ≤ 5% RTP per hour.	15 minutes
C. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for intervals > 5 effective full power days (EFPD) per 30 EFPD interval or > 14 EFPD per 365 EFPD interval with COLSS in service.	C.1	Restore regulating CEA groups to within limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Regulating CEA groups inserted beyond the short term steady state insertion limit with COLSS out of service.	D.1 Restore regulating CEA groups to within limits. OR	2 hours
	D.2 Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by CEA group position and short term steady state insertion limit specified in the COLR.	2 hours
E. PDIL alarm circuit inoperable.	E.1 Perform SR 3.1.7.1.	1 hour AND Once per 4 hours thereafter
F. Required Actions and associated Completion Times not met.	F.1 Be in MODE 3.	6 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.4 Departure From Nucleate Boiling Ratio (DNBR)

LCO 3.2.4 The DNBR shall be maintained by one of the following methods:

a. Maintaining Core Operating Limit Supervisory System (COLSS) calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR (when COLSS is in service, and either one or both control element assembly calculators (CEACs) are OPERABLE);

b. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR decreased by the allowance specified in the COLR (when COLSS is in service and neither CEAC is OPERABLE);

c. Operating within limits as specified in the COLR using any operable core protection calculator (CPC) channel (when COLSS is out of service and either one or both CEACs are OPERABLE); or

d. Operating within limits as specified in the COLR using any operable CPC channel (when COLSS is out of service and neither CEAC is OPERABLE).

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With COLSS in service and the COLSS calculated core power exceeding the COLSS calculated core power operating limit.	A.1 Restore the DNBR to within limit.	1 hour

(continued)

5.7 Reporting Requirements (continued)

5.7.1.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience, including documentation of all challenges to pressurizer safety valves, shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Attention: Document Control Desk, Washington, D.C., with a copy to the Regional Administrator of the Regional Office of the NRC, no later than the 15th of each month following the calendar month covered by the report.

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1. Specification 3.1.1, "SHUTDOWN MARGIN (SDM) - T_{avg} >200°F;"

2. Specification 3.1.2, "SHUTDOWN MARGIN (SDM) - T_{avg} ≤200°F;"

3. Specification 3.1.4, "Moderator Temperature Coefficient;"

4. Specification 3.1.5, Control Element Assembly (CEA) Alignment;"

5. Specification 3.1.7, "Regulating CEA Insertion Limits;"

6. Specification 3.1.8, "Part Length Control Element Assembly Insertion Limits;"

7. Specification 3.2.1, "Linear Heat Rate;"

8. Specification 3.2.4, "Departure From Nucleate Boiling Ratio;"

9 Specification 3.2.5, "Axial Shape Index;"

10 Specification 3.9.1, "Boron Concentration."

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

1.a.1 Letter, dated September 5, 1985, M. O. Medford (SCE) to G. W. Knighton (NRC), "Docket No. 50-361 and 50-362 Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 3)

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

6.b "Identification of NRC Safety Evaluation Report Limitations and/or Constraints on Reload Analysis Methodology," CEN-635(S), Rev. 00, February 1999

6.c Letter, Stephen Dembek (NRC) to Harold B. Ray (SCE), dated June 2, 1999, "San Onofre Nuclear Generating Station Units 2 and 3 - Evaluation of Reload Analysis Methodology Technology Transfer (TAC Nos. MA4289 and MA4290)"

(Methodology for Specifications 3.1.1 and 3.1.2 for Shutdown Margin)

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal hydraulic limits, Emergency Core Cooling System (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.7.1.6 Not Used

5.7.1.7 Hazardous Cargo Traffic Report

Hazardous cargo traffic on Interstate 5 (I-5) and the AT&SF railway shall be monitored and the results submitted to the NRC Regional Administrator once every three years.

(continued)

PCN-559

Attachment F

PROPOSED TECHNICAL SPECIFICATIONS UNIT 3
(with changes)

1.1 Definitions

SHUTDOWN MARGIN (SDM) (continued)	a. All full length CEAs (shutdown and regulating) are fully inserted except for the single CEA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all CEAs verified fully inserted by two independent means, it is not necessary to account for a stuck CEA in the SDM calculation. With any CEAs not capable of being fully inserted, the reactivity worth of these CEAs must be accounted for in the determination of SDM, and b. There is no change in part length CEA position.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.1 SHUTDOWN MARGIN (SDM) – T_{avg} > 200°F

LCO 3.1.1 SDM shall be within the limits specified in the COLR.

APPLICABILITY: MODES 3 and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	Verify SDM is acceptable with increased allowance for the withdrawn worth of inoperable CEAs.	1 hour after detection of inoperable CEA(s) and every 12 hours thereafter
SR 3.1.1.2	Verify SDM to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.2 SHUTDOWN MARGIN (SDM) – T_{avg} ≤ 200°F

LCO 3.1.2 SDM shall be within the limits specified in the COLR.

APPLICABILITY: MODE 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2.1	Verify SDM to be within the limits specified in the COLR.	24 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.3 Reactivity Balance

LCO 3.1.3 The core reactivity balance shall be within ± 1% Δk/k of predicted values.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Core reactivity balance not within limit.	A.1	Re-evaluate core design and safety analysis and determine that the reactor core is acceptable for continued operation.	7 days
	AND		
	A.2	Establish appropriate operating restrictions and SRs.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.5 Control Element Assembly (CEA) Alignment

LCO 3.1.5 All full length CEAs shall be OPERABLE and all full and part length CEAs shall be aligned to within 7 inches of all other CEAs in its group.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One regulating CEA trippable and misaligned from its group by > 7 inches.	A.1	Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND		
	A.2.1	Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours
	OR		
			(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.2	Align the remainder of the CEAs in the group to within 7 inches of the misaligned CEA(s) while maintaining the insertion limit of LCO 3.1.7, "Regulating Control Element Assembly (CEA) Insertion Limits."	2 hours
B. One shutdown CEA trippable and misaligned from its group by > 7 inches.	B.1	Initiate THERMAL POWER reduction in accordance with COLR requirements.	15 minutes
	AND		
	B.2	Restore the misaligned CEA(s) to within 7 inches of its group.	2 hours

(continued)

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Shutdown Control Element Assembly (CEA) Insertion Limits

LCO 3.1.6 All shutdown CEAs shall be withdrawn to ≥ 145 inches.

APPLICABILITY: MODE 1,
MODE 2 with any regulating CEA not fully inserted.

----------NOTE----------
This LCO is not applicable while performing SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more shutdown CEA(s) not within limit.	A.1 Restore shutdown CEA(s) to within limit.	2 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

3.1 REACTIVITY CONTROL SYSTEMS

3.1.7 Regulating CEA Insertion Limits

LCO 3.1.7 The power dependent insertion limit (PDIL) alarm circuit shall be OPERABLE, and

a. With the Core Operating Limit Supervisory System (COLSS) in service, the regulating CEA groups shall be limited to the withdrawal sequence, insertion limits, and associated time restraints specified in the COLR.

b. With COLSS out of service, the regulating CEA groups shall be limited to the short term steady state insertion limit and associated time restraints specified in the COLR.

APPLICABILITY: MODES 1 and 2.

----------NOTE----------
This LCO is not applicable while conducting SR 3.1.5.3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating CEA groups inserted beyond the transient insertion limit with COLSS in service.	A.1 Restore regulating CEA groups to within limits. OR	2 hours (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by the CEA group position and insertion limits specified in the COLR.	2 hours
B. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for > 4 hours per 24 hour interval with COLSS in service.	B.1	Verify short term steady state insertion limits are not exceeded.	15 minutes
	OR		
	B.2	Restrict increases in THERMAL POWER to ≤ 5% RTP per hour.	15 minutes
C. Regulating CEA groups inserted between the long term steady state insertion limit and the transient insertion limit for intervals > 5 effective full power days (EFPD) per 30 EFPD interval or > 14 EFPD per 365 EFPD interval with COLSS in service.	C.1	Restore regulating CEA groups to within limits.	2 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Regulating CEA groups inserted beyond the short term steady state insertion limit with COLSS out of service.	D.1 Restore regulating CEA groups to within limits. OR D.2 Reduce THERMAL POWER to less than or equal to the fraction of RTP allowed by CEA group position and short term steady state insertion limit specified in the COLR.	2 hours 2 hours
E. PDIL alarm circuit inoperable.	E.1 Perform SR 3.1.7.1.	1 hour AND Once per 4 hours thereafter
F. Required Actions and associated Completion Times not met.	F.1 Be in MODE 3.	6 hours

3.2 POWER DISTRIBUTION LIMITS

3.2.4 Departure From Nucleate Boiling Ratio (DNBR)

LCO 3.2.4 The DNBR shall be maintained by one of the following methods:

a. Maintaining Core Operating Limit Supervisory System (COLSS) calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR (when COLSS is in service, and either one or both control element assembly calculators (CEACs) are OPERABLE);

b. Maintaining COLSS calculated core power less than or equal to COLSS calculated core power operating limit based on DNBR decreased by the allowance specified in the COLR (when COLSS is in service and neither CEAC is OPERABLE);

c. Operating within limits as specified in the COLR using any operable core protection calculator (CPC) channel (when COLSS is out of service and either one or both CEACs are OPERABLE); or

d. Operating within limits as specified in the COLR using any operable CPC channel (when COLSS is out of service and neither CEAC is OPERABLE).

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. With COLSS in service and the COLSS calculated core power exceeding the COLSS calculated core power operating limit.	A.1 Restore the DNBR to within limit.	1 hour

(continued)

5.7 Reporting Requirements (continued)

5.7.1.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience, including documentation of all challenges to pressurizer safety valves, shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Attention: Document Control Desk, Washington, D.C., with a copy to the Regional Administrator of the Regional Office of the NRC, no later than the 15th of each month following the calendar month covered by the report.

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1. Specification 3.1.1, "SHUTDOWN MARGIN (SDM) - T_{avg} >200°F;"
2. Specification 3.1.2, "SHUTDOWN MARGIN (SDM) - T_{avg} ≤200°F;"
3. Specification 3.1.4, "Moderator Temperature Coefficient;"
4. Specification 3.1.5, Control Element Assembly (CEA) Alignment;"
5. Specification 3.1.7, "Regulating CEA Insertion Limits;"
6. Specification 3.1.8, "Part Length Control Element Assembly Insertion Limits;"
7. Specification 3.2.1, "Linear Heat Rate;"
8. Specification 3.2.4, "Departure From Nucleate Boiling Ratio;"
9. Specification 3.2.5, "Axial Shape Index;"
10. Specification 3.9.1, "Boron Concentration."

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

1.a.1 Letter, dated September 5, 1985, M. O. Medford (SCE) to G. W. Knighton (NRC), "Docket No. 50-361 and 50-362 Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 3)

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

6.b "Identification of NRC Safety Evaluation Report Limitations and/or Constraints on Reload Analysis Methodology," CEN-635(S), Rev. 00, February 1999

6.c Letter, Stephen Dembek (NRC) to Harold B. Ray (SCE), dated June 2, 1999, "San Onofre Nuclear Generating Station Units 2 and 3 - Evaluation of Reload Analysis Methodology Technology Transfer (TAC Nos. MA4289 and MA4290)"

(Methodology for Specifications 3.1.1 and 3.1.2 for Shutdown Margin)

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal hydraulic limits, Emergency Core Cooling System (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.7.1.6 Not Used

5.7.1.7 Hazardous Cargo Traffic Report

Hazardous cargo traffic on Interstate 5 (I-5) and the AT&SF railway shall be monitored and the results submitted to the NRC Regional Administrator once every three years.

(continued)