SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL℠ Company

Dwight E. Nunn
Vice President

August 26, 2004

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

Subject: **Docket Nos. 50-361 and 50-362**
Proposed Change Number (PCN) 553
Request to Revise Technical Specifications 4.2.1, "Fuel Assemblies" and 5.7.1.5, "Core Operating Limits Report (COLR)"
San Onofre Nuclear Generating Station Units 2 and 3

Gentlemen:

Pursuant to 10 CFR 50.90, Southern California Edison (SCE) hereby requests the following amendment: In Technical Specification (TS) 4.2.1, "Fuel Assemblies," add reference to ZIRLO™ clad fuel and filler rods and in TS 5.7.1.5, "Core Operating Limits Report (COLR)," add the following references to the list of analytical methods used to determine the core operating limits: "Calculative Methods for the C-E Nuclear Power Large Break LOCA Evaluation Model," CENPD-132, Supplement 4-P-A, August 2000, and "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P-A, November 2001. This change is requested to implement ZIRLO™ fuel rod cladding material into the fuel design for San Onofre Units 2 and 3. 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.

A list of commitments associated with this proposed amendment is provided in Enclosure 3.

SCE requests the enclosed amendment request be approved by September 1, 2005 to support use of the ZIRLO™ fuel rod cladding material beginning with Cycle 14 operation. SCE requests this amendment be issued effective as of the date of issuance, to be implemented within 60 days from the date of issuance.

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

Sincerely,

P.O. Box 128
San Clemente, CA 92674-0128
949-368-1480
Fax 949-368-1490

A001

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
3. Commitments Associated with the Proposed Amendments

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. 227

SOUTHERN CALIFORNIA EDISON COMPANY, et al., pursuant to 10CFR50.90, hereby submit Amendment Application No. 227. This amendment application consists of Proposed Change Number (PCN) 553 to Facility Operating License NPF-10. PCN-553 is a request to revise Technical Specification (TS) 4.2.1, "Fuel Assemblies," and TS 5.7.1.5, "Core Operating Limits Report (COLR)," to implement ZIRLO™ fuel rod cladding material into the fuel design for San Onofre Nuclear Generating Station Unit 2.

State of California
County of San Diego

Subscribed and sworn to (or affirmed) before me this 26th day of August, 2004.

By: _____
Dwight E. Nunn
Vice President

_____
Notary Public

MARIANE SANCHEZ
Commission # 1375470
Notary Public - California
San Diego County
My Comm. Expires Oct 14, 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. 211

SOUTHERN CALIFORNIA EDISON COMPANY, et al., pursuant to 10CFR50.90, hereby submit Amendment Application No. 211. This amendment application consists of Proposed Change Number (PCN) 553 to Facility Operating License NPF-15. PCN-553 is a request to revise Technical Specification (TS) 4.2.1, "Fuel Assemblies," and TS 5.7.1.5, "Core Operating Limits Report (COLR)," to implement ZIRLO™ fuel rod cladding material into the fuel design for San Onofre Nuclear Generating Station Unit 3.

State of California
County of San Diego

Subscribed and sworn to (or affirmed) before me this 26th day of August, 2004.

By: _____
Dwight E. Nunn
Vice President

_____
Notary Public

MARIANE SANCHEZ
Commission # 1375470
Notary Public - California
San Diego County
My Comm. Expires Oct 14, 2006

ENCLOSURE 2

Southern California Edison Company's Evaluation

Subject: ZIRLO™ Fuel Rod Cladding Material

Request for Amendment to Technical Specifications 4.2.1, "Fuel Assemblies," and 5.7.1.5, "Core Operating Limits Report (COLR)"

ATTACHMENTS:

1.0 DESCRIPTION

This letter is a request 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 Operating Licenses NPF-10 and NPF-15 by amending the following specifications in sections 4.0 and 5.0 of the Technical Specifications (TS) for SONGS Units 2 and 3:

1. TS 4.2.1 -"Fuel Assemblies" (page 4.0-1)

   - The reference to "Zircaloy clad fuel rods" will be changed to "Zircaloy or ZIRLO™ clad fuel rods."

   - The reference to "zirconium alloy or stainless steel filler rods" will be changed to "zirconium alloy (such as ZIRLO™ or Zircaloy) or stainless steel filler rods."

2. TS 5.7.1.5 – "Core Operating Limits Report (COLR)" (pages 5.0-27 and 5.0-29)

   The following references will be added to the list of analytical methods used to determine the core operating limits:

   3.a.5 "Calculative Methods for the C-E Nuclear Power Large Break LOCA Evaluation Model," CENPD-132, Supplement 4-P-A, August 2000

   7. "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P-A, November 2001.

This change is necessary to implement ZIRLO™ fuel rod cladding material into the fuel design for SONGS 2 and 3. The first SONGS fuel design to use ZIRLO™ cladding material will be Unit 2, Cycle 14, which is scheduled to startup in approximately December 2005.

2.0 PROPOSED CHANGE

The SONGS fuel design is described in TS 4.2.1, which is being revised to allow the use of ZIRLO™ cladding, and to clarify that ZIRLO™ filler rods can be used.

Core operating limits are established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and are documented in the Core Operating Limits Report (COLR). TS 5.7.1.5 lists those analytical methods used to determine the core operating limits. These analytical methods have been previously reviewed and approved by the NRC. Topical report CENPD-404-P-A, "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs" (Reference 1), will be added to the list contained in TS 5.7.1.5. This topical report is necessary for the performance of design and safety analyses associated with the implementation of ZIRLO™ cladding material. Additionally, TS 5.7.1.5.b.3.a will be updated to add the most recent Combustion Engineering (CE) large break Loss of Coolant Accident (LOCA) evaluation model (CENPD-132, Supplement 4-P-A) (Reference 2), as CENPD-404-P-A requires its use.

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

In a continuing effort to improve fuel performance, Westinghouse Electric Company (formerly Combustion Engineering (CE) Nuclear Power) is implementing ZIRLO™ cladding material into its fuel design for CE designed pressurized water reactors (PWRs). The use of ZIRLO™ clad fuel rods will substantially reduce waterside corrosion and, in particular, the spalling experienced by current Zircaloy-4 clad fuel rods as they reach higher burnup levels and duty cycles. Southern California Edison (SCE) plans to use ZIRLO™ clad fuel rods in the reactor cores for SONGS 2 and 3. TS 5.7.1.5, Core Operating Limits Report (COLR), currently does not include a methodology reference for the use of ZIRLO™ clad fuel rods in the core. The proposed TS change provides this reference by adding topical report CENPD-404-P-A (Reference 1) to TS 5.7.1.5.

Topical report CENPD-404-P-A summarizes the ZIRLO™ material properties as they pertain to fuel rod cladding and provides an evaluation of these properties and the correlations for use in design and licensing analysis activities. CENPD-404-P-A also identifies the other CENP topical reports that are impacted by the implementation of ZIRLO™ cladding. Providing the information within CENPD-404-P-A that is needed to implement ZIRLO™ precluded the need to revise and have the NRC review each of these other individual topical reports. Nothing in any of the previously approved NRC topical reports has been changed. CENPD-404-P-A provides the direction necessary for applying the other topical reports to ZIRLO™ clad fuel. CENPD-404-P-A was generically approved by the NRC for application to CENP designed Nuclear Power Plants and fuel on September 12, 2001 (Reference 3). SONGS Units 2 and 3 are CE designed nuclear power plants and are supplied with CE designed nuclear fuel. As such, CENPD-404-P-A (Reference 1) and its NRC acceptance (Reference 3) are wholly applicable without exception to SONGS Units 2 and 3.

Topical report CENPD-404-P-A (Reference 1) requires the use of specific versions of the Westinghouse Emergency Core Cooling System (ECCS) performance evaluation models

for Combustion Engineering (CE) designed Pressurized Water Reactors (PWRs). The evaluation models include CENPD-132, Supplement 4-P-A, "Calculative Methods for the CE Nuclear Power Large Break LOCA Evaluation Model" (Reference 2) and CENPD-137, Supplement 2-P-A, "Calculative Methods for the ABB CE Small Break LOCA Evaluation Model" (Reference 6). These evaluation models have been generically accepted by the NRC for the analysis of ECCS performance of CE designed PWRs.

CENPD-137, Supplement 2-P-A is the current SONGS 2/3 licensing basis, and, as such, is already listed in TS 5.7.1.5.b.4.a.3.

CENPD-132, Supplement 4-P-A is currently not listed in TS 5.7.1.5, because CENPD-132, Supplement 3-P-A is the most recent version used at SONGS Units 2 and 3. On approval of this PCN-553, the TSs will be updated to list CENPD-132, Supplement 4-P-A.

Updated Final Safety Analysis (UFSAR) Chapter 1 and Chapter 4 will be revised under the 50.59 process to reflect the manufacturing and implementation of ZIRLO™ clad fuel rods. Additionally, UFSAR Chapter 6 and Chapter 15 will be revised under the 50.59 process to reflect the re-analyses performed for the ZIRLO™ cladding material.

4.0 TECHNICAL ANALYSIS

TS 5.7.1.5, Core Operating Limits Report (COLR), will be changed to add the analytical method, CENPD-404-P-A. The new methodology will provide the capability for the safety analyses to analyze ZIRLO™ clad fuel rods. In addition, this methodology requires the use of Westinghouse's Emergency Core Cooling System (ECCS) performance methodology for CE designed PWRs, CENPD-132, Supplement 4-P-A, "Calculative Methods for the CE Nuclear Power Large Break LOCA Evaluation Model" and CENPD-137, Supplement 2-P-A, "Calculative Methods for the ABB CE Small Break LOCA Evaluation Model." The subject methodologies have been reviewed and generically approved by the NRC for application to CE designed PWRs. Since the affected methodologies will be used for safety analyses for which they were approved, the proposed change does not adversly impact the safety of the facility.

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 proposed change allows the use of methods required for the implementation of ZIRLO™ clad fuel rods in San Onofre Nuclear Generating Station (SONGS) Units 2 and 3. The use of this methodology will not increase the probability of an accident because the plant systems will not be operated outside of design limits, no different equipment will be operated, and system interfaces will not change.

As ZIRLO™ material is introduced to the reactor, transition cores will exist in which fuel assemblies containing ZIRLO™ and Zircaloy clad fuel rods are co-resident. Each type of fuel assembly (ZIRLO™ or Zircaloy clad fuel rods) will be evaluated based on the approved topical reports listed in TS 5.7.1.5.

The use of this additional methodology will not increase the consequences of an accident because Limiting Conditions of Operation (LCOs) will continue to restrict operation to within the regions that provide acceptable results, and Reactor Protection System (RPS) trip setpoints will restrict plant transients so that the consequences of accidents will be acceptable. In addition, the consequences of the accidents will be calculated using NRC accepted methodologies.

The transition cores that will exist as ZIRLO™ clad fuel is introduced to the reactor will not increase the consequences of an accident. Operation within the LCOs and RPS setpoints will continue to restrict plant transients so that the consequences of accidents will be acceptable.

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. The ZIRLO™ clad fuel rod design does not introduce features that could initiate an accident.

   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 (SAFDLs) are not exceeded during steady state operation, normal operational transients and anticipated operational occurrences. All fuel limits and design criteria shall be met based on the approved methodologies defined in the topical reports. The RPS in combination with the LCOs will continue to prevent any anticipated combination of transient conditions for reactor coolant system temperature, pressure, and thermal power level that would result in a violation of the Safety Limits. Therefore, the proposed changes will have no impact on the margins as defined in the Technical Specification bases.

The safety analyses determine the LCO settings and RPS setpoints that establish the initial conditions and trip setpoints, which ensure that the Design Basis Events (Postulated Accidents and Anticipated Operational Occurrences) analyzed in the Updated Final Safety Analysis Report (UFSAR) produce acceptable results. In addition, all fuel limits and design criteria shall be satisfied. The Design Basis Events that are impacted by the implementation of ZIRLO™ cladding will be analyzed using the NRC accepted methodology described in CENPD-404-P-A.

The change in the fuel rod cladding material and the use of the Emergency Core Cooling System (ECCS) performance evaluation models, CENPD-132, Supplement 4-P-A, "Calculative Methods for the CE Nuclear Power Large Break LOCA Evaluation Model" and CENPD-137, Supplement 2-P-A, "Calculative Methods for the ABB CE Small Break LOCA Evaluation Model" will not involve a reduction in the margin of safety because LCOs and Limiting Safety System Settings (LSSS) will be adjusted, if necessary, to maintain acceptable results for the impacted Design Basis Events.

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 regulatory basis for Technical Specification (TS) 5.7.1.5, "Core Operating Limits Report (COLR)," is to ensure that the analytical methods used to determine the core operating limits have been previously reviewed and approved by the NRC. NRC Safety Evaluation of Topical Report CENPD-404-P, Revision 0, "Implementation of ZIRLO Material Cladding in CE Nuclear Power Fuel Assembly Designs," Reference 3, reviewed and approved the use of ZIRLO™ cladding material for Combustion Engineering (CE) designed plants.

The regulatory basis for TS 4.2.1, "Reactor Core - Fuel Assemblies," is to describe the fuel assembly cladding and filler rod material that is allowed to be used within the reactor core. TS 4.2.1 is being revised to clarify that ZIRLO™ clad fuel rods and filler rods can be used for the fuel assemblies.

10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," allows for zircaloy or ZIRLO™ cladding material.

10 CFR 50, Appendix K, "ECCS (Emergency Core Cooling System) Evaluation Models," describes the required and acceptable features of the evaluation models used for Loss of Coolant Accidents (LOCAs). SCE will use evaluation models that have already been generically approved by the NRC for large and small break LOCAs. These evaluation models incorporated the use of ZIRLO™ cladding materials in the LOCA analysis. The specific supplement number and date for the evaluation models referenced in CENPD-404-P-A (Reference 1) will be incorporated into the SONGS Units 2 and 3 TS 5.7.1.5.

5.3 SCE Response to NRC Conditions in the Safety Evaluation for CENPD-404-P

Topical report CENPD-404-P-A (Reference 1) describes the implementation of ZIRLO™ fuel rod cladding material properties and correlations in Westinghouse Electric Company LLC (Westinghouse) design and safety analysis methodologies for CE designed pressurized water reactors (PWRs) and fuel. It was generically approved by the Nuclear Regulatory Commission (NRC) for application to CE designed PWRs and fuel on September 12, 2001 (Reference 3). The NRC safety evaluation (SE) (Reference 3) stated that it is acceptable for Westinghouse to use ZIRLO™ as the cladding material for CENP-designed plants subject to conditions. The conditions and SCE's response to each condition are as follows:

Condition 1

The corrosion limit as predicted by the best-estimate model will remain below 100 microns for all locations of the fuel.

SCE Response:

The maximum allowable corrosion limit of 100 microns will be added to the SONGS Units 2 and 3 Updated Final Safety Analysis Report (UFSAR). SCE will calculate the corrosion thickness using the best estimate models and methods described in Reference 1. Contained in Reference 1 is a letter from P. W. Richardson (Westinghouse) to J. S. Cushing (NRC), "Response to Requests for Additional Information on Topical Report CENPD-404-P, Rev. 0," LD2001-0045, Rev. 0, August 10, 2001 (Reference 4). This letter specifically addresses the best estimate models for predicting corrosion limits.

Condition 2

All the conditions listed in the NRC SEs for all the CENPD methodologies used for ZIRLO™ fuel analysis will continue to be met, except that the use of ZIRLO™ cladding in addition to Zircaloy-4 cladding is now approved.

SCE Response:

SCE will continue to abide by the conditions listed in the SEs for all CENPD methodologies used for the analysis of ZIRLO™ fuel. This will be accomplished as described in the SCE Reload Topical Report (Reference 5).

Condition 3

All CENP methodologies will be used only within the range for which ZIRLO™ data was acceptable and for which the verifications discussed in CENPD-404-P and responses to requests for additional information were performed.

SCE Response:

ZIRLO™ data ranges for the methodologies in which they are used will be verified in accordance with the SCE Reload Topical Report (Reference 5).

Condition 4

Until data is available demonstrating the performance of ZIRLO™ cladding in CENP designed plants, the fuel duty will be limited for each CENP designed plant with some provision for adequate margin to account for variations in core design (e.g., cycle length, plant operating conditions, etc). Details of this condition will be addressed on a plant specific basis during the approval to use ZIRLO™ in a specific plant.

SCE Response:

SCE will limit the fuel duty for SONGS Units 2 and 3 with a provision for adequate margin to account for variations in core design (e.g., cycle length, plant operating conditions, etc.). This limit will be applicable until data is available demonstrating the performance of ZIRLO™ cladding at CENP 16x16 plants.

SCE will restrict the modified Fuel Duty Index (FDIm) of each ZIRLO™ clad fuel pin to 110% of the maximum fuel pin value previously experienced, except as noted below. SCE proposes to use the same base maximum fuel pin value (approximately 600) previously determined for Arizona Public Service Company's (APS's) Palo Verde Nuclear Generating Station (PVNGS) plants, which employ a 16x16 fuel design similar to that used at SONGS Units 2 and 3. Furthermore, since PVNGS plants have already implemented ZIRLO™ clad fuel, their operational experience and data collection will precede that of SONGS Units 2 and 3. Like PVNGS, the preceding 110% limit may be exceeded for a fraction of the fuel pins in up to eight assemblies. For these eight assemblies, SCE will restrict the fuel duty of ZIRLO™ clad fuel pins to 120% of the maximum fuel pin value previously experienced at CENP 16x16 plants in the aggregate.

If the modified FDIm and measured oxide thickness for CENP 16x16 ZIRLO™ fuel correlate as expected or is lower than predicted, SCE would no longer restrict the FDIm except as required to

meet the 100 micron oxide limit. If the measured oxide for CENP 16x16 fuel is significantly greater than predicted, SCE will provide justification to the NRC prior to an increase to the limits on FDIm. If the NRC lifts the FDIm condition based on sufficient accumulation of data from CENP designed plants, SCE would no longer restrict the FDIm except as required to meet the 100 micron oxide limit.

Condition 5

The burnup limit for this approval is 60 GWD/MTU.

SCE Response:

The maximum rod average burnup limit for ZIRLO™ clad fuel assemblies of 60 GWD/MTU will be added to the SONGS Units 2 and 3 UFSAR.

6.0 ENVIRONMENTAL CONSIDERATION

The proposed amendment does 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 amendment meets 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 the proposed amendment.

7.0 REFERENCES

1. "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P-A, Revision 0, dated November 2001

2. "Calculative Methods for the C-E Nuclear Power Large Break LOCA Evaluation Model," CENPD-132, Supplement 4-P-A, August 2000

3. Safety Evaluation of Topical Report "Implementation of ZIRLO Material Cladding in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P, Revision 0, dated September 12, 2001 and Correction To Safety Evaluation on Topical Report "Implementation of ZIRLO Material Cladding in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P, Revision 0, dated October 17, 2001

4. Letter from P. W. Richardson (Westinghouse Electric Company, LLC) to John S. Cushing (NRC), August 10, 2001, Subject: "Response to Requests for Additional Information on Topical Report CENPD-404-P, Rev. 0," LD2001-0045, Rev. 0

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

6. "Calculative Methods for the ABB CE Small Break LOCA Evaluation Model," CENPD-137, Supplement 2-P-A, April 1998

8.0 PRECEDENT

1. Palo Verde Nuclear Generating Station, Units 1, 2, and 3 – Issuance of Amendments Re: Technical Specification 5.6.5b, Core Operating Limits Report (COLR) and Use of ZIRLO Cladding Material (TAC Nos. MB3373, MB3374, and MB3375), March 12, 2002.

   This amendment added CENPD-404-P-A, "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs," to the list of those analytical methods used to determine the core operating limits that are reviewed and approved by the NRC and are contained in the Technical Specifications. This amendment is essentially identical to what SCE is requesting.

ATTACHMENT A

Existing Technical Specification Pages

San Onofre Unit 2

4.0 DESIGN FEATURES

4.1 Site

4.1.1 Exclusion Area Boundary

The exclusion area boundary shall be as shown in Figure 4.1-1.

4.1.2 Low Population Zone (LPZ)

The LPZ shall be as shown in Figure 4.1-2.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Integral or Discrete Burnable Absorber Rods may be used. They may include: borosilicate glass - Na_2O-B_2O_3-SiO_2 components, boron carbide - B_4C, zirconium boride - ZrB_2, gadolinium oxide - Gd_2O_3, erbium oxide - Er_2O_3. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Element Assemblies

The reactor core shall contain 83 full length and eight part length control element assemblies (CEAs). The control material shall be silver indium cadmium, boron carbide, and inconel as approved by the NRC.

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

1.b.1 Letter, dated September 5, 1985, G. W. Knighton (NRC) to K. P. Baskin (SCE), "Issuance of Amendment No. 47 to Facility Operating License NPF-10 and Amendment No. 36 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.4 for Moderator Temperature Coefficient and 3.9.1 for Boron Concentration)

2.a.1 Letter, dated September 28, 1984, M. O. Medford (SCE) to G. W. Knighton (NRC), "Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 2)

2.b.1 Letter, dated January 9, 1985, G. W. Knighton NRC) to K. P. Baskin, "Issuance of Amendment No. 30 to Facility Operating License NPF-10 and Amendment No. 19 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.5 for Control Element Assembly (CEA) Alignment, 3.1.7 for Regulating CEA Insertion Limits, and 3.1.8 for Part Length Control Element Assembly Insertion Limits)

3.a.1 "Calculative Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, August 1974

3.a.2 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 1, February 1975

3.a.3 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 2-P, July 1975

3.a.4 "Calculative Methods for the C-E Large Break LOCA Evaluation Model for the Analysis of C-E and W Designed NSSS," CEN-132, Supplement 3-P-A, June 1985

3.b.1 Letter, O. D. Parr (NRC) to F. M. Stem (CE), dated June 13, 1975 (NRC Staff Review of the Combustion Engineering ECCS Evaluation Model)

(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)

PCN-553

ATTACHMENT B

Existing Technical Specification Pages

San Onofre Unit 3

4.0 DESIGN FEATURES

4.1 Site

4.1.1 Exclusion Area Boundary

The exclusion area boundary shall be as shown in Figure 4.1-1.

4.1.2 Low Population Zone (LPZ)

The LPZ shall be as shown in Figure 4.1-2.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Integral or Discrete Burnable Absorber Rods may be used. They may include: borosilicate glass - Na_2O-B_2O_3-SiO_2 components, boron carbide - B_4C, zirconium boride - ZrB_2, gadolinium oxide - Gd_2O_3, erbium oxide - Er_2O_3. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Element Assemblies

The reactor core shall contain 83 full length and eight part length control element assemblies (CEAs). The control material shall be silver indium cadmium, boron carbide, and inconel as approved by the NRC.

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

1.b.1 Letter, dated September 5, 1985, G. W. Knighton (NRC) to K. P. Baskin (SCE), "Issuance of Amendment No. 47 to Facility Operating License NPF-10 and Amendment No. 36 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.4 for Moderator Temperature Coefficient and 3.9.1 for Boron Concentration)

2.a.1 Letter, dated September 28, 1984, M. O. Medford (SCE) to G. W. Knighton (NRC), "Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 2)

2.b.1 Letter, dated January 9, 1985, G. W. Knighton NRC) to K. P. Baskin, "Issuance of Amendment No. 30 to Facility Operating License NPF-10 and Amendment No. 19 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.5 for Control Element Assembly (CEA) Alignment, 3.1.7 for Regulating CEA Insertion Limits, and 3.1.8 for Part Length Control Element Assembly Insertion Limits)

3.a.1 "Calculative Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, August 1974

3.a.2 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 1, February 1975

3.a.3 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 2-P, July 1975

3.a.4 "Calculative Methods for the C-E Large Break LOCA Evaluation Model for the Analysis of C-E and W Designed NSSS," CEN-132, Supplement 3-P-A, June 1985

3.b.1 Letter, O. D. Parr (NRC) to F. M. Stem (CE), dated June 13, 1975 (NRC Staff Review of the Combustion Engineering ECCS Evaluation Model)

(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)

PCN-553

ATTACHMENT C

Proposed Technical Specification Pages

(Redline and Strikeout)

San Onofre Unit 2

4.0 DESIGN FEATURES

4.1 Site

4.1.1 Exclusion Area Boundary

The exclusion area boundary shall be as shown in Figure 4.1-1.

4.1.2 Low Population Zone (LPZ)

The LPZ shall be as shown in Figure 4.1-2.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO™ clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Integral or Discrete Burnable Absorber Rods may be used. They may include: borosilicate glass - Na_2O-B_2O_3-SiO_2 components, boron carbide - B_4C, zirconium boride - ZrB_2, gadolinium oxide - Gd_2O_3, erbium oxide - Er_2O_3. Limited substitutions of zirconium alloy (such as ZIRLO™ or Zircaloy) or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Element Assemblies

The reactor core shall contain 83 full length and eight part length control element assemblies (CEAs). The control material shall be silver indium cadmium, boron carbide, and inconel as approved by the NRC.

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

1.b.1 Letter, dated September 5, 1985, G. W. Knighton (NRC) to K. P. Baskin (SCE), "Issuance of Amendment No. 47 to Facility Operating License NPF-10 and Amendment No. 36 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.4 for Moderator Temperature Coefficient and 3.9.1 for Boron Concentration)

2.a.1 Letter, dated September 28, 1984, M. O. Medford (SCE) to G. W. Knighton (NRC), "Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 2)

2.b.1 Letter, dated January 9, 1985, G. W. Knighton NRC) to K. P. Baskin, "Issuance of Amendment No. 30 to Facility Operating License NPF-10 and Amendment No. 19 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.5 for Control Element Assembly (CEA) Alignment, 3.1.7 for Regulating CEA Insertion Limits, and 3.1.8 for Part Length Control Element Assembly Insertion Limits)

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3.a.2 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 1, February 1975

3.a.3 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 2-P, July 1975

3.a.4 "Calculative Methods for the C-E Large Break LOCA Evaluation Model for the Analysis of C-E and W Designed NSSS," CEN-132, Supplement 3-P-A, June 1985

3.a.5 "Calculative Methods for the C-E Nuclear Power Large Break LOCA Evaluation Model," CENPD-132, Supplement 4-P-A, August 2000

3.b.1 Letter, O. D. Parr (NRC) to F. M. Stem (CE), dated June 13, 1975 (NRC Staff Review of the Combustion Engineering ECCS Evaluation Model)

(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)"

7. "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P-A, November 2001.

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-553

ATTACHMENT D

Proposed Technical Specification Pages

(Redline and Strikeout)

San Onofre Unit 3

4.0 DESIGN FEATURES

4.1 Site

4.1.1 Exclusion Area Boundary

The exclusion area boundary shall be as shown in Figure 4.1-1.

4.1.2 Low Population Zone (LPZ)

The LPZ shall be as shown in Figure 4.1-2.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO™ clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Integral or Discrete Burnable Absorber Rods may be used. They may include: borosilicate glass - Na_2O-B_2O_3-SiO_2 components, boron carbide - B_4C, zirconium boride - ZrB_2, gadolinium oxide - Gd_2O_3, erbium oxide - Er_2O_3. Limited substitutions of zirconium alloy (such as ZIRLO™ or Zircaloy) or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Element Assemblies

The reactor core shall contain 83 full length and eight part length control element assemblies (CEAs). The control material shall be silver indium cadmium, boron carbide, and inconel as approved by the NRC.

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

1.b.1 Letter, dated September 5, 1985, G. W. Knighton (NRC) to K. P. Baskin (SCE), "Issuance of Amendment No. 47 to Facility Operating License NPF-10 and Amendment No. 36 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.4 for Moderator Temperature Coefficient and 3.9.1 for Boron Concentration)

2.a.1 Letter, dated September 28, 1984, M. O. Medford (SCE) to G. W. Knighton (NRC), "Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 2)

2.b.1 Letter, dated January 9, 1985, G. W. Knighton NRC) to K. P. Baskin, "Issuance of Amendment No. 30 to Facility Operating License NPF-10 and Amendment No. 19 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.5 for Control Element Assembly (CEA) Alignment, 3.1.7 for Regulating CEA Insertion Limits, and 3.1.8 for Part Length Control Element Assembly Insertion Limits)

3.a.1 "Calculative Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, August 1974

3.a.2 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 1, February 1975

3.a.3 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 2-P, July 1975

3.a.4 "Calculative Methods for the C-E Large Break LOCA Evaluation Model for the Analysis of C-E and W Designed NSSS," CEN-132, Supplement 3-P-A, June 1985

3.a.5 "Calculative Methods for the C-E Nuclear Power Large Break LOCA Evaluation Model," CENPD-132, Supplement 4-P-A, August 2000

3.b.1 Letter, O. D. Parr (NRC) to F. M. Stem (CE), dated June 13, 1975 (NRC Staff Review of the Combustion Engineering ECCS Evaluation Model)

(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)"

7. "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P-A, November 2001.

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-553

ATTACHMENT E

Proposed Technical Specification Pages

San Onofre Unit 2

4.0 DESIGN FEATURES

4.1 Site

4.1.1 Exclusion Area Boundary

The exclusion area boundary shall be as shown in Figure 4.1-1.

4.1.2 Low Population Zone (LPZ)

The LPZ shall be as shown in Figure 4.1-2.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO™ clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Integral or Discrete Burnable Absorber Rods may be used. They may include: borosilicate glass - Na_2O-B_2O_3-SiO_2 components, boron carbide - B_4C, zirconium boride - ZrB_2, gadolinium oxide - Gd_2O_3, erbium oxide - Er_2O_3. Limited substitutions of zirconium alloy (such as ZIRLO™ or Zircaloy) or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Element Assemblies

The reactor core shall contain 83 full length and eight part length control element assemblies (CEAs). The control material shall be silver indium cadmium, boron carbide, and inconel as approved by the NRC.

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

1.b.1 Letter, dated September 5, 1985, G. W. Knighton (NRC) to K. P. Baskin (SCE), "Issuance of Amendment No. 47 to Facility Operating License NPF-10 and Amendment No. 36 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

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2.b.1 Letter, dated January 9, 1985, G. W. Knighton NRC) to K. P. Baskin, "Issuance of Amendment No. 30 to Facility Operating License NPF-10 and Amendment No. 19 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.5 for Control Element Assembly (CEA) Alignment, 3.1.7 for Regulating CEA Insertion Limits, and 3.1.8 for Part Length Control Element Assembly Insertion Limits)

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3.a.2 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 1, February 1975

3.a.3 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 2-P, July 1975

3.a.4 "Calculative Methods for the C-E Large Break LOCA Evaluation Model for the Analysis of C-E and W Designed NSSS," CEN-132, Supplement 3-P-A, June 1985

3.a.5 "Calculative Methods for the C-E Nuclear Power Large Break LOCA Evaluation Model," CENPD-132, Supplement 4-P-A, August 2000

3.b.1 Letter, O. D. Parr (NRC) to F. M. Stem (CE), dated June 13, 1975 (NRC Staff Review of the Combustion Engineering ECCS Evaluation Model)

(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)"

7. "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P-A, November 2001.

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)

ATTACHMENT F

Proposed Technical Specification Pages

San Onofre Unit 3

4.0 DESIGN FEATURES

4.1 Site

4.1.1 Exclusion Area Boundary

The exclusion area boundary shall be as shown in Figure 4.1-1.

4.1.2 Low Population Zone (LPZ)

The LPZ shall be as shown in Figure 4.1-2.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO™ clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Integral or Discrete Burnable Absorber Rods may be used. They may include: borosilicate glass - Na_2O-B_2O_3-SiO_2 components, boron carbide - B_4C, zirconium boride - ZrB_2, gadolinium oxide - Gd_2O_3, erbium oxide - Er_2O_3. Limited substitutions of zirconium alloy (such as ZIRLO™ or Zircaloy) or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Element Assemblies

The reactor core shall contain 83 full length and eight part length control element assemblies (CEAs). The control material shall be silver indium cadmium, boron carbide, and inconel as approved by the NRC.

(continued)

5.7 Reporting Requirements (continued)

5.7.1.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

1.b.1 Letter, dated September 5, 1985, G. W. Knighton (NRC) to K. P. Baskin (SCE), "Issuance of Amendment No. 47 to Facility Operating License NPF-10 and Amendment No. 36 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.4 for Moderator Temperature Coefficient and 3.9.1 for Boron Concentration)

2.a.1 Letter, dated September 28, 1984, M. O. Medford (SCE) to G. W. Knighton (NRC), "Reload Analysis Report," San Onofre Nuclear Generating Station Units 2 and 3 (Cycle 2)

2.b.1 Letter, dated January 9, 1985, G. W. Knighton NRC) to K. P. Baskin, "Issuance of Amendment No. 30 to Facility Operating License NPF-10 and Amendment No. 19 to Facility Operating License NPF-15," San Onofre Nuclear Generating Station Units 2 and 3

(Methodology for Specifications 3.1.5 for Control Element Assembly (CEA) Alignment, 3.1.7 for Regulating CEA Insertion Limits, and 3.1.8 for Part Length Control Element Assembly Insertion Limits)

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3.a.2 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 1, February 1975

3.a.3 "Calculational Methods for the C-E Large Break LOCA Evaluation Model," CENPD-132P, Supplement 2-P, July 1975

3.a.4 "Calculative Methods for the C-E Large Break LOCA Evaluation Model for the Analysis of C-E and W Designed NSSS," CEN-132, Supplement 3-P-A, June 1985

3.a.5 "Calculative Methods for the C-E Nuclear Power Large Break LOCA Evaluation Model," CENPD-132, Supplement 4-P-A, August 2000

3.b.1 Letter, O. D. Parr (NRC) to F. M. Stem (CE), dated June 13, 1975 (NRC Staff Review of the Combustion Engineering ECCS Evaluation Model)

(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)"

7. "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P-A, November 2001.

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)

ENCLOSURE 3

LIST OF REGULATORY COMMITMENTS

1. Southern California Edison (SCE) will limit the fuel duty for San Onofre Units 2 and 3 with a provision for adequate margin to account for variations in core design (e.g., cycle length, plant operating conditions, etc.). This limit will be applicable until data is available demonstrating the performance of ZIRLO™ cladding at Combustion Engineering Nuclear Power (CENP) 16x16 plants. If the measured oxide thickness for CENP 16x16 ZIRLO™ clad fuel is significantly greater than predicted, SCE will provide justification to the NRC prior to an increase to the limits on the modified Fuel Duty Index (FDIm).

2. Revise the San Onofre Units 2 and 3 Updated Final Safety Analysis Report as needed to reflect the changes contained with the Technical Specification changes in PCN-553 to allow the use of ZIRLO™ fuel cladding material. The changes shall include, but are not limited to, the following:

   a. The corrosion limit as predicted by the best-estimate model is limited to below 100 microns for all locations of the fuel for ZIRLO™ clad fuel assemblies.

   b. The maximum rod average burnup is limited to 60 GWD/MTU for ZIRLO™ clad fuel assemblies.

   c. Chapter 1 and Chapter 4 will be revised as necessary to reflect the manufacturing and implementation of ZIRLO™ clad fuel rods.

   d. The applicable sections of Chapter 6 and Chapter 15 will be revised to reflect the re-analysis performed for the ZIRLO™ cladding material.