San Onofre Nuclear Generating Station, Units 2&3

Updated Final Safety Analysis Report

Revised April 2011

Chapter 1.0: Introduction and General Description of the Plant

Section 1.3.1 – Comparisons with Similar Facility Designs

Section 1.3.2 – Comparison of Final and Preliminary Information

Section 1.3.3 – Title 10, CFR, Parts 20, 50, and 100 Evaluation

1. INTRODUCTION AND GENERAL DESCRIPTION OF PLANT

Section 1.3 provides summary information on plant comparisons, design changes since the PSAR submittal and compliance with NRC regulations that exited at the time of licensing. This information was submitted to the NRC in support of initial plant licensing. This section will be updated to identify the current compliance requirements in accordance with 10 CFR 50.71. Information considered to be historical information is not subject to review or periodic updates. Updated information on design and compliance is found throughout the other sections of this UFSAR.

1.3 COMPARISON TABLES

1.3.1 COMPARISONS WITH SIMILAR FACILITY DESIGNS

Tables 1.3-1 and 1.3-2 present a summary of the characteristics of the San Onofre Nuclear Generating Station, Units 2 and 3. Table 1.3-1 presents similar reactor core and coolant system data for Arkansas Nuclear One, Unit 2 and Pilgrim Station, Unit 2. Table 1.3-2 presents similar containment system, engineered safety features, and electrical components data for Farley Units 1 and 2, Calvert Cliffs Units 1 and 2, Oconee Units 1, 2, and 3, Palisades Unit 1, and Turkey Point Units 3 and 4.

The Arkansas Unit 2 and Pilgrim Station Unit 2 designs were selected for comparison in table 1.3-1 because of the basic similarity of the reactor core and coolant systems. In addition, Arkansas Unit 2 was selected for comparison because this reactor is nearing completion of its operating license application review with the NRC.

1.3.2 COMPARISON OF FINAL AND PRELIMINARY INFORMATION

Table 1.3-3 contains a discussion of all significant changes that have been made in plant design since submittal of the PSAR.

1.3.3 TITLE 10, CFR, PARTS 20, 50, AND 100 EVALUATION

Table 1.3-4 contains an evaluation of compliance of the plant against 10 CFR, Parts 20, 50, and 100 as they existed on March 2, 1981. Additional information and updates have been included as required by 10 CFR 50.71(e).

Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 1 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Hydraulic and Thermal Design Parameters				
Rated core heat output, MWt	3,390 (1)	4.4	2,815	3,456
Rated core heat output, Btu/h	11,570 10^6	4.4	9,608 x 10^6	11,800 x 10^6
Heat generated in fuel, %	97.5	4.4	97.5	96.5/96
System pressure, nominal, lb/in.^{2}a	2,250	4.4	2,250	2,250
System pressure, minimum steady state, lb/in.^{2}a	2,200	4.4	2,200	2,200
Hot channel factors,				
Heat flux, F_q	2.35		2.35	2.35
Enthalpy rise, F_H	1.55	4.4	1.57	1.55
DNB ratio at nominal conditions	2.11 (CE-1)	4.4	2.26 (W-3)	2.26 (W-3)
Coolant flow				
Total flowrate, lb/h	148 x 10^6	4.4	120.4 x 10^6	148 x 10^6
Effective flowrate for heat transfer, lb/h	143.6 x 10^6	4.4	116.2 x 10^6	142.8 x 10^6
Core flow area, ft^2	54.7	4.4	44.7	54.8
Average velocity along fuel rods, ft/s	16.4	4.4	16.4	16.5
Average mass velocity, lb/h-ft^2	2.63 x 10^6	4.4	2.60 x 10^6	2.60 x 10^6
Coolant temperature, °F				
Nominal inlet	553 (2)	4.4	553.5	557.5

Notes: 1. Licensed power level subsequently increased to 3438 MWt.

2. RCS original specified value is shown. RCS operating temperatures have been lowered to reduce steam generator tube failure rate due to stress corrosion cracking. As such, these RCS values are different than originally specified. Lower RCS operating temperatures are shown in Section 5.1.

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Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 2 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Hydraulic and Thermal Design Parameters (cont)				
Design inlet	556	4.4	556.5	560.5
Average rise in vessel	58 (2)	4.4	58.5	58.3
Average rise in core	60 (2)	4.4	60.5	60.3
Average in core	583 (2)	4.4	583.75	588
Average in vessel	582 (2)	4.4	582.75	587
Nominal outlet of hot channel	642 (2)	4.4	652.6	651.4
Average film coefficient, Btu/h-ft^2-F	6,200	4.4	6,200	6,200
Average film temperature difference, °F	29	4.4	31	30
Heat transfer at 100% power				
Active heat transfer surface area, ft^2	63,000	4.4	51,000	62,000
Average heat flux, Btu/h-ft^2	178,900	4.4	185,000	184,000
Maximum heat flux, Btu/h-ft^2	420,000	4.4	433,800	429,900
Average thermal output, kW/ft	5.23	4.4	5.41	5.39
Maximum thermal output, kW/ft	12.3	4.4	12.7	12.6
Maximum clad surface temperature at nominal pressure, °F	657	4.4	657	656.5
Fuel center temperature, °F maximum at 100% power	3,180	4.4	3,420	3,420

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Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 3 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Core Mechanical Design Parameters				
Fuel assemblies				
Design	CEA	4.2	CEA	CEA
Rod pitch, in.	0.506	4.2	0.506	0.5063
Cross-section dimensions, in.	7.972 x 7.972	4.2	7.97 x 7.97	7.98 x 7.98
Fuel weight (as UO_2), lbs	223.9×10^3	4.2	183,834	223,900
Total weight, lbs	314,867	4.2	250,208	
Number of grids per assembly	12	4.2	12	12
Fuel rods				
Number	50,540	4.2	40,644	49,476
Outside diameter, in.	0.382	4.2	0.382	0.382
Diametral gap, in.	0.007	4.2	0.007	0.007
Clad thickness, in.	0.025	4.2	0.025	0.025
Clad material	Zircaloy-4	4.2	Zircaloy	Zircaloy-4
Fuel pellets				
Material	UO_2 sintered	4.2	UO_2 sintered	UO_2 sintered
Diameter, in.	0.325	4.2	0.325	0.325
Length, in.	0.390	4.2	0.390	0.390

Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 4 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Core Mechanical Design Parameters (cont)				
Control assemblies				
Neutron absorber	(See table 4.2-1	4.2	B_4C/Ag-In-Cd	B_4C/Ag-In-Cd
Cladding material	Inconel 625	4.2	NiCrFe alloy	NiCrFe alloy
Clad thickness	0.035	4.2	0.035	0.035
Number of assembly, full/part-length	83/8	4.2	73/8	83/8
Number of rods per assembly	4,5/5	4.2	5	5/4 (4 full-length CEAs have 4 absorber rods per CEA)
Nuclear Design Data				
Structural characteristics				
Core diameter, in. (equivalent)	136	4.2	123	136
Core height, in. (active fuel)	150	4.2	150	150
Number of fuel assemblies	217	4.2	177	217
$U0_2$ Rods per assembly, unshimmed/shimmed				
Batch A	236	4.3	NA	236
Batch C	236/224 or 220	4.3	NA	236/230
Batch D	236	4.3	236	NA
Batch E	236/232 or 228 or 220	4.3	236	NA

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Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 5 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Nuclear Design Data (cont)				
Performance characteristics loading technique	3-batch mixed central zone	4.3	3-batch mixed central zone	3-batch mixed central zone
Fuel discharge burnup, MWD/MTU				
Average cycle	45,000	4.3	45,000	NA
Pin feed enrichment, wt% U-235				
Pin type 1	2.78	4.3	3.40	NA
Pin type 2	3.40	4.3	4.05	NA
Pin type 3	4.05	4.3	NA	NA
Control characteristics effective multiplication (beginning of cycle)				
Cold, no power	1.204	4.3		1.169
Hot, no power	1.164	4.3		1.133
Hot, full power, Xe equilibrium	1.112	4.3		1.071
Control assemblies				
Total rod worth (hot), %	9.75	4.3	>9	>8
Boron concentrations for criticality:				
Zero power no rods inserted, ppm	1583			
Cold/Hot	1465/1583	4.3		980/970

Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 6 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Nuclear Design Data (cont)				
At power with no rods inserted, no Xe/equilibrium xenon, ppm	1474/1186	4.3	870/612	850/620
Kinetic characteristics, range over life				
Moderator temperature coefficient, Δp/°F	See table 4.3-4			-0.5×10^{-4} -2.2×10^{-4} to
Doppler coefficient, Δp/°F	-1.21×10^{5} -1.41×10^{5}	4.3		-1.10×10^{-5} -1.9×10^{5} to
Reactor Coolant System-Code Requirements				
Component				
Reactor vessel	ASME III Class 1	5.2	ASME III Class A	ASME III, Class 1
Steam generator				
Tube side	ASME III Class 1	5.2	ASME III Class A	ASME III, Class 1
Shell side	ASME III Class II	5.2	ASME III Class A	ASME III, Class 1
Pressurizer	ASME III Class 1	5.2	ASME III Class 1	ASME III, Class 1
Pressurizer relief (or quench) tank	ASME VIII Div. 1	5.4	ASME III Class C	
Pressurizer safety valves	ASME III Class 1	5.2	ASME III Class 1	ASME III, Class 1

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Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 7 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Reactor Coolant System-Code Requirements (cont)				
Reactor coolant piping	ASME III Class 1	5.2	ASME III Class 1 USASB31.1)	
Principal Design Parameters of the Coolant System				
Operating pressure, lb/in.^{2}g	2,235	5.1	2,235	2,235
Reactor inlet temperature,°F	553 (2)	5.1	553.5	558.3
Reactor outlet temperature,°F	611.2 (2)	5.1	612.5	616
Number of loops	2	5.1	2	2
Design pressure, lb/in.^{2}g	2,485	5.1	2,485	2,485
Design temperature,°F	650	5.1	650	
Hydrostatic test pressure (cold), lb/in.^{2}g	3,110		3,110	3,110
Total coolant volume, ft^3	10,300 (without pressurizer)		9,376	11,700
Principal Design Parameters of the Reactor Vessel				
Material	See table 5.2-2	5.2	SA-533, Grade B, Class 1, low alloy steel, internally clad with Type 304 austenitic SS	SA-533, Grade B Class 1 (plate) clad with Type 304 austenitic SS

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Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 8 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Principal Design Parameters of the Reactor Vessel (cont)				
Design pressure, lb/in.^{2}g	2,485	5.4	2,485	2,485
Design temperature, °F	650	5.4	650	650
Operating pressure, lb/in.^{2}g	2,235	5.4	2,235	2,235
Inside diameter of shell, in.	172	5.4	157	172
Outside diameter across nozzles, in.	253		238	253
Overall height of vessel and enclosure head, ft-in. to top of CEDM nozzle	43-6-1/2	5.4	43-4-1/6	43-6-1/4
Minimum clad thickness, in.	1/8	5.4	1/8	1/8
Principal Design Parameters of the Steam Generators				
Number of Units	2	5.4	2	2
Type	Vertical U-tube with integral moisture separator	5.5	Vertical U-tube with integral moisture separator	Vertical U-tube with integral moisture separator
Tube material	Inconel (ASME SB-163)	5.4	NiCrFe alloy	NiCrFe alloy
Shell material	SA-533 Grade B Class 1 and SA-516, Grade 70		SA-533 Grade B Class 1 and SA-516 Grade 70	SA 33 Grade B Class 1 and SA-516 Grade 70
Tube side design pressure, lb/in.^{2}g	2,485	5.4	2,485	2,485

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Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 9 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Principal Design Parameters of the Steam Generators (cont)				
Tube side design temperature, °F	650	5.4	650	650
Tube side design flow, lb/h	74×10^6	5.4	60.2×10^6	79.2×10^6
Shell side design pressure, lb/in.^{2}a	1,100	5.4	1,100	1.185
Shell side design temperature, °F	560	5.4	560	570
Operating pressure, tube side, nominal, lb/in.2g	2,235	5.4	2,235	2,235
Operating pressure, shell side, maximum, lb/in.^{2}g	985		985	1,085
Maximum moisture at outlet at full load, %	0.2	5.4	0.2	0.25
Hydrostatic test pressure, tube side (cold) lb/in.^{2}g	3,110		3,110	3,110
Steam pressure, at full power, lb/in.^{2}a	900 (2)	5.4	900	1,000
Steam temperature, at full power, °F	532 (2)	5.4	531.95	544.6
Principal Design Parameters of the Reactor Coolant Pumps				
Number of units	4	5.4	4	4
Type	Vertical, single stage radial flow with bottom suction and horizontal discharge		Vertical, single stage centrifugal with bottom suction and horizontal discharge	Vertical single stage centrifugal with bottom suction and horizontal discharge

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Table 1.3-1
REACTOR CORE AND COOLANT SYSTEM PARAMETERS (Sheet 10 of 10)

Item	San Onofre Units 2 and 3	Reference Section	ANO-2	Pilgrim Station Unit 2
Principal Design Parameters of the Steam Generators (cont)				
Design pressure, lb/in.^{2}g	2,485	5.4	2,485	2,485
Design temperature, °F	650	5.4	650	650
Operating pressure, nominal lb/in.^{2}g	2,235	5.4	2,235	2,235
Suction temperature, °F	553 (2)	5.4	553.5	557.5
Design capacity, gal/min	99,000	5.4	80,000	99,500
Design head, ft	310	5.4	275	305
Hydrostatic test pressure (cold), lb/in.^{2}g	3,110		3,110	3,110
Motor type	AC induction, single speed		AC induction, single speed	AC induction, single speed
Motor rating, hp	9,700		6,500	8,715
Principal Design Parameters of the Reactor Coolant Piping				
Material	SA-516, Grade 70 with nominal 7/32 SS clad		SA-516, Grade 70 with nominal 3/16 SS clad	SA-516, Grade 70 with SS clad
Hot leg ID, in.	42	5.4	42	42
Cold leg ID, in.	30	5.4	30	30
Between pump and steam generator ID, in.	30	5.4	30	30

Notes:
1. Licensed power level subsequently increased to 3438 MWt.
2. RCS original specified value is shown. RCS operating temperatures have been lowered to reduce steam generator tube failure rate due to stress corrosion cracking. As such, these RCS values are different than originally specified. Lower RCS operating temperatures are shown in Section 5.1.

Table 1.3-2
COMPARISON OF PLANT CHARACTERISTICS (Sheet 1 of 5)

Item	San Onofre Units 2&3 (FSAR)	Farley Units 1&2 (FSAR)	Calvert Cliffs Units 1&2 (FSAR)	Oconee Units 1, 2&3 (FSAR)	Palisades Unit 1 (FSAR)	Turkey Point Units 3 and 4 (FSAR)	Significant Similarities	Significant Differences	Ref. by Sect.
Containment System Parameters									
Type	Steel-lined prestressed post-tensioned concrete cylinder, curved dome roof.	Steel-lined, prestressed post-tensioned concrete cylinder, curved dome roof.	Steel-lined, prestressed post-tensioned concrete cylinder, curved dome roof.	Steel-lined, prestressed post-tensioned concrete cylinder, curved dome roof.	Steel-lined, prestressed post-tensioned concrete cylinder, curved dome roof.	Steel-lined, prestressed post-tensioned concrete cylinder, curved dome roof.	Containment types are the same for all units	None	3.8.1
Design Parameters Inside diameter, ft Inside height, ft Nominal free volume, ft^3 Design Pressure, $lb/in.^2g$ Concrete thickness, ft Vertical wall Dome	 150 172 2,335,000 60 4-1/3 3-3/4	 130 183 2,024,900 54 3-3/4 3-1/4	 130 182 2,000,000 50 3-3/4 3-1/4	 116 208 1,900,000 59 3-3/4 3-1/4	 116 190 1,600,000 55 3 2-1/2	 116 169 1,550,000 59 3-1/2 3		Containment design parameters, differ because of differences in dome height.	3.8.1
Containment leak prevention and mitigation systems	Leaktight penetrations and continuous steel liner. Automatic isolation where required. The exhaust from penetration rooms to vent stack.	Leaktight penetrations and continuous steel liner. Automatic isolation where required. The exhaust from penetration rooms to vent stack.	Leaktight penetrations and continuous steel liner. Automatic isolation where required. The exhaust from penetration rooms to vent stack.	Leaktight penetrations and continuous steel liner. Automatic isolation where required. The exhaust from penetration rooms to vent stack.	Leaktight penetrations and continuous steel liner. Automatic isolation where required.	Leaktight penetrations and continuous steel liner. Automatic isolation where required.	Same design bases for San Onofre, Farley, Calvert Cliffs, and Oconee	Palisades and Turkey Point differ from those of San Onofre, Farley, Calvert Cliffs, and Oconee. The former type has no exhaust from penetration rooms to vent stack.	6.2.4, 9.4.3
Gaseous effluent purge	Discharge through stack	Discharge through stack	Discharge through stack	Discharge through stack	Discharge through stack	Through particulate filter and monitors part of main exhaust system.	All use stack discharge except Turkey Point.		
Engineered Safety Features Safety injection system No. of high head pumps No. of low head pumps	 3 2	 3 2	 3 2	 3 2	 3 2	 2 2	Same basic design for all except Oconee and Turkey Point	Oconee has 3 lowhead pumps and Turkey Point has 2 injection pumps.	6.3

(a) System presently not being used.

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Table 1.3-2
COMPARISON OF PLANT CHARACTERISTICS (Sheet 2 of 5)

Item	San Onofre Units 2 and 3 (FSAR)	Farley Units 1&2 (FSAR)	Calvert Cliffs Units 1 and 2 (FSAR)	Oconee Units 1, 2 and 3 (FSAR)	Palisades Unit 1 (FSAR)	Turkey Point Units 3 and 4 (FSAR)	Significant Similarities	Significant Differences	Ref. by Sect.
Engineered Safety Features (cont)									
Containment fan coolers No. of units Air flow capacity, each at emergency conditions, ft^3/min	 4 31,000	 4 60,000	 4 60,000	 3 58,000	 4 60,00	 3 25,000	San Onofre, Farley, Calvert Cliffs, and Palisades have 4 each. Oconee and Turkey Point have 3 each.	San Onofre has an emergency condition flowrate of 31,000 ft^3/min. Farley, Calvert Cliffs, and Palisades have emergency-condition flowrates of 60,000 ft^3/min. Oconee and Turkey Point have emergency flowrates of 58,000 and 25,000 ft^3/min respectively.	
Post-accident filters No. of units Ft^3/min	 None None	 None None	 3 20,000	 None None	 None None	 3 37,500	San Onofre similar to Farley, Oconee, and Palisades.	Calvert Cliffs and Turkey Point both have post-accident filters. The other units do not	9.4.1
Containment spray No. of pumps	 2	 2	 2	 2	 2	 2	San Onofre, Farley, Calvert Cliffs, and Turkey Point have 2 containment spray pumps each.	Palisades has 3 containment spray pumps. The others have 2 each.	6.2.2
Emergency power Diesel-generator units Safety injection tanks,number	4 total for both units 4	5 total for both units 3	3 total for both units 4	Hydro 2	2 4	2 total for both units 3		Oconee uses hydro emergency power. Palisades utilizes 2 diesel generators; Turkey Point has 2 for both plants; Farley has a total of 5 for both plants; and San Onofre has 4 for both units. Oconee utilizes 2 safety injection tanks, while Farley has 3, San Onofre has 4, Calvert Cliffs has 4, Palisades has 4, and Turkey Point has 3.	8.3.1

Table 1.3-2
COMPARISON OF PLANT CHARACTERISTICS (Sheet 3 of 5)

Item	San Onofre Units 2&3 (FSAR)	Farley Units 1&2 (FSAR)	Calvert Cliffs Units 1&2 (FSAR)	Oconee Units 1, 2&3 (FSAR)	Palisades Unit 1 (FSAR)	Turkey Point Units 3&4 (FSAR)	Significant Similarities	Significant Differences	Ref. by Sect.
Electrical Components									
Standby power system	Total of 4 diesels; 2 supply each unit. Diesels are connected to 4160V buses. No capability for sharing.	Total of 5 diesels; 3 are shared between Units 1&2. Diesels are connected to 4160V buses.	Three diesels connected to 4-kV buses and shared between Units 1&2.	Two hydro units. 230-kV network and start-up transformers.	Total of 2 diesels. Diesels are connected to 2400V buses.	Two diesels connected to 4160 buses and shared.	San Onofre similar to Farley, except for sharing of diesels as noted	Oconee has hydro units. San Onofre has 1 diesel permanently aligned to an ESF bus per unit, as against that for Calvert Cliffs and Turkey Point, which have shared diesels only.	8.3.1
Engineered safety feature buses	Two 4160V buses/unit divided into two separate and redundant systems.	Six 4160V buses/unit divided into two separate and redundant systems.	Two 4-kV buses/unit divided into separate and redundant systems.	Three 4160V redundant buses per unit.	Two 2400V separate and redundant buses.	Two 4160V buses/unit divided into separate and redundant systems.	San Onofre similar to all.	None	8.3.1
DC systems	Separate and redundant 125V-dc systems for ESF loads. Separate 125V-dc and 250V-dc systems for non-ESF loads.	Separate and redundant 125V-dc systems for ESF loads. Separate dc systems for loads in auxiliary building, turbine building, cooling tower area, diesel generator building and switchyard	Four batteries between 2 units divided to give two separate and redundant 125V-dc systems. Separate dc systems for turbine building and the switchyard.	Separate and redundant 125V-dc system for instrumentation and control power system. Separate dc systems for large loads, switching station control, and control of Keowee hydro station.	Separate and redundant 125V-dc systems supplying ESF loads and non-ESF loads	Separate, redundant 125V-dc system supplying ESF loads and non-ESF loads. Separate dc system for switchyard.	San Onofre similar to Farley, Calvert Cliffs and Oconee.	San Onofre separate dc systems for non-ESF loads, in contrast to that for Palisades and Turkey Point.	8.3.2
Vital instru-mentation systems	Four inverters arranged to give 4 separate and redundant channels.	Four inverters arranged to give 4 separate and redundant channels.	Four inverters between 2 units to give 4 separate and redundant channels per unit.	Four inverters arranged to give 4 separate and redundant channels.	Four inverters arranged to give 4 separate and redundant channels.	Four inverters arranged to give 4 separate and redundant channels.	San Onofre similar to all.	None	8.3.1
Offsite power system	One 230-kV switchyard common to units 2&3. Each unit is provided with two unit auxiliary and three startup transformers supplied from the common switchyard.	Unit 1 - 230-kV switchyard. Unit 2 - 500-kV switchyard. Each unit has 2 startup transformers and 2 unit auxiliary transformers with the ESF buses supplied from startup transformers.	500-kV switchyard. Two startup transformers shared between two units.	Units 1&2 connected to the 230-kV switchyard and Unit 3 to 500 kV switchyard. Each unit has 1 unit auxiliary and one startup transformer.	Switchyard - 345 kV. Two unit auxiliary and 2 startup transformers. ESF buses normally supplied from unit auxiliary transformers.	Switchyard - 240 kV. Each unit has 1 unit auxiliary and 1 startup transformer.	San Onofre similar to Turkey Point.	San Onofre has 1 unit auxiliary and 3 startup transformers compared to one of each for Oconee and Turkey Point. The startup transformers for San Onofre units are not shared as is the case for Calvert Cliffs.	

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Table 1.3-2
COMPARISON OF PLANT CHARACTERISTICS (Sheet 4 of 5)

Item	San Onofre Units 2 and 3 (FSAR)	Farley Units 1&2 (FSAR)	Calvert Cliffs Units 1&2(FSAR)	Oconee Units 1, 2 and 3 (FSAR)	Palisades Unit 1 (FSAR)	Turkey Point Units 3 and 4 (FSAR)	Signifi-cant Similar-ities	Signi-ficant Differ-ences	Ref. by Sect.
Radioactive Waste Management System									
Liquid Radwaste Sys									
Miscellaneous liquid waste system	Shared	Shared	Shared	Shared	Single unit	Shared			
Discharge: Evaporator distillate : Evaporator bottoms	Circulating water outfall Solid radwaste system	Circulating water outfall Solid radwaste system	Circulating water outfall Solid radwaste system	Circulating water outfall Solid radwaste system	Circulating water outfall Solid radwaste system	Circulating water outfall Solid radwaste system			
Recycle capability	Yes	Yes	Yes	Yes	Yes	Yes			
Total reprocessing Storage capacity (holdup tanks)	1 at 6,000 gal 2 at 25,000	40,000 gal	8,000 gal	40,000 gal	3,800 gal	234,000 gal			
Filter type	Disposable cartridge and backflushable	Disposable cartridge	Disposable cartridge	Disposable cartridge	Disposable cartridge	Disposable cartridge			
Evaporator capacity	50 gal/min	35 gal/min	20 gal/min	10 gal/min	20 gal/min	20 gal/min			
Coolant and boric acid recycle system	Shared	Shared	Shared (Reactor coolant waste processing system)	Shared (Coolant treatment system)	Single unit (Part of CVCS)	Single unit (Part of CVCS)			
Discharge: Concentrator Bottoms Discharge:Concentrator Condensate	No; recycle to boric acid makeup and batching tanks No; recycled to CVCS	Liquid radwaste system No; recycled to CVCS	Solid radwaste system Circulating water discharge	Solid radwaste system Liquid waste system	Solid radwaste system No; recycled to CVCS	No; recycled to boric acid tanks No; recycled to CVCS			
Concentrator capacity	50 gal/min	30 gal/min	2 at 20 gal/min	10 gal/min	20 gal/min	20 gal/min			
Concentrated boric storage tanks	2 at 25,000 gal each	2 at 21,000 gal each	2 at 10,000 gal each	3 at 22,000 gal each	2 at 6,537 gal each	3 at 7,500 gal each			
Radwaste receiver tanks	2 primary at 120,000 gal each and 2 secondary at 120,000 gal each	3 at 28,000 gal each	2 waste receiver tanks at 90,000 gal each	6 at 80,000 gal each	4 at 50,000 gal each	3 holdup tanks at 100,000 gal each			

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Table 1.3-2
COMPARISON OF PLANT CHARACTERISTICS (Sheet 5 of 5)

Item	San Onofre Units 2&3 (FSAR)	Farley Units 1&2 (FSAR)	Calvert Cliffs Units 1&2 (FSAR)	Oconee Units 1,2&3 (FSAR)	Palisades Unit 1 (FSAR)	Turkey Point Units 3 and 4 (FSAR)	Significant Similarities	Significant Differences	References by Sections
Radioactive Waste Management System (cont)									
Waste Gas System	Shared	Shared	Shared	Shared	Single unit	Shared			
Number of Decay tanks	6, Seismic I	8	3	4	3	6			
Tank size (each)	500 ft^3	600 ft^3	610 ft^3	1,100 ft^3	100 ft^3	525 ft^3			
Design pressure	350 $lb/in.^2g$	150 $lb/in.^2g$	150 $lb/in.^2g$	100 $lb/in.^2g$	120 $lb/in.^2g$	150 $lb/in.^2g$			
Discharge point	Plant vent stack	Plant vent	Plant vent	Plant vent	Plant vent	Plant vent			
Holdup time available	30 days (minimum)	30 days (minimum)	60 days	30 days	30 days (minimum)	45 days			
Surge tank	Yes, Seismic I	No	Yes	No	Yes	No			
Surge tank size	500 ft^3 at 150 $lb/in.^2g$	-	610 ft^3 at 50 $lb/in.^2g$	-	75 ft^3 at 20 $lb/in.^2g$	-			
Compressor capacity	2 at 5 standard ft^3/min	2 at 40 standard ft^3/min	2 at 4.7 standard ft^3/min	4 at 48 standard ft^3/min	2 at 2.35 standard ft^3/min	2 at 40 standard ft^3/min			
Radwaste Solidification System	Shared	Shared	Shared	Shared	Single unit	Shared			
Solidification agent	Concrete	Vermiculite - cement	(a)	Urea formaldehyde	Urea formaldehyde	Vermiculite - cement			
On site storage:									
High level solidification	20-50 ft^3 drums	175-55 gal drums	(a)	Total area for 30 600 gal drums	Total area for 18 containers	Total area for 50 drums			
Low level solidification baling station	25-55 gal drums	400-55 gal drums	(a)						
Shipping containers used	55 gal drums and 50 ft^3 drums	55 gal drums	(a)	600 gal drums	50 ft^3 containers	55 gal drums			

Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 1 of 10)

	Item	System Described in FSAR Section	Reason for Change
1.	Pipe break criteria	3.6	The present design basis pipe breaks are based on adherence to the recommendations of Branch Technical Position MTEB 3-1 which represents the most up-to-date interpretation of the requirements of NRC Regulatory Guide 1.46. These pipe breaks are used in the analyses of subcompartment pressurization, jet impingement, and pipe whip effects.
2.	Containment building	3.8.1	Roof for containment structure was revised from a shallow dome to a hemispherical dome which alters the interior height of the structure.
			Modification of the containment dome design is a design improvement: reduction in material quantities and field labor cost. With the planned configuration change, prestressing method has been revised by use of continuous U-shaped tendons in lieu of separate vertical and dome tendons. There is no effect on nuclear safety-related design.
3.	Fuel assembly design	4.2	The reactor fuel assembly design for San Onofre 2 and 3 has been changed from the 14 x 14 rod array described in the PSAR to a 16 x 16 array. This change provides a lower linear heat rate and reduces peak clad temperature during a postulated LOCA. Dimensional characteristics of the 16 x 16 design are shown in table 1.3-1 and the design itself is described in section 4.2. The test programs to demonstrate the adequacy of the San Onofre 2 and 3 16 x 16 design are described in chapter 15.
4.	CEAs and drive mechanisms	4.2, 3.9.4, 4.5.1	The San Onofre 2 and 3 reactor will employ a total of 91 CEAs and CEDMs. The PSAR design included 69 CEAs and CEDMs. The 91 CEAs of the current design are made up to 79 standard 5-finger CEAs, 4 modified 4-finger CEAs and 8 Inconel/B_4C part-lengths-CEAs. Ninety-one identical CEDMs are employed. For comparison, the 69 CEA design described in the PSAR was composed of 61 standard 5-finger CEAs driven by standard tripping type CEDMs and 8 B_4C part-length CEAs driven by nontripping CEDMs. The current CEA design is described in section 4.2. The CEDM design is described in subsections 3.9.4 and 4.5.1.

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Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 2 of 10)

	Item	System Described in FSAR Section	Reason for Change
5.	Burnable poison shims	4.2, 4.3	Burnable poison shims have been added to the fuel assemblies replacing some fuel. These shims permit lowering of the initial boric acid concentration in the coolant. This provides an additional negative component to the moderator temperature coefficient. The mechanical design of the burnable poison shims is described in section 4.2. Their nuclear characteristics are described in section 4.3.
6.	Shutdown cooling system	5.4.7	The design of the shutdown cooling system (SCS) was upgraded since the PSAR so that the SCS could perform its function in spite of any single active component or power failure. This design will provide the following: A. Availability of the SCS to cool the RCS to cold shutdown conditions, including post-LOCA; B. Protection of the low-pressure safety injection system and SCS from overpressurization.
			The major changes which were incorporated to meet the above criteria are outlined below: A. Parallel bypass lines and valves were added to each shutdown cooling suction isolation valve and to the SCS "warmup" bypass line. B. Combinations of separate independent interlocks are provided on the shutdown cooling suction isolation valves to prevent their opening when the RCS pressure is greater than the SCS design conditions.
7.	Reactor coolant system supports	5.4.14	

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Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 3 of 10)

	Item	System Described in FSAR Section	Reason for Change
8.	Hydrogen purge system	6.2.5	SONGS was granted an exemption from certain requirements of 10 CFR 50.44 and 10 CFR 50, Appendix A, General Design Criterion 41. As a result, the hydrogen purge system is no longer part of the SONGS 2/3 design basis. See subsection 6.2.5 for details. The hydrogen purge valves remain part of the containment isolation system (see subsection 6.2.4).
9.	Safety injection system	6.3	Provisions were made to manually realign the SIS at several hours post-LOCA to provide simultaneous hot and cold leg safety injection. The hot leg injection flow path is established from the HPSI pumps discharge header to the drain nozzle and SDC line on the RCS hot legs, respectively. As part of the long-term ECCS operation, the operator will initiate hot leg injection and balance the lines to provide a 50-50% split of the hot and cold leg injection flowrate. This mode of operation is designed to inject the specified amount of flow into the hot legs, condensing the steam and increasing the water level in the intact hot legs. This will induce reverse flushing flow out the cold leg break (for cold leg break only). This flushing action will eliminate the potential buildup of boric acid in the reactor vessel.

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Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 4 of 10)

	Item	System Described in FSAR Section	Reason for Change
10.	Reactor protective system	7.2	The reactor protective system described in the PSAR has been expanded and some portions modified in order to provide automatic protection against axial xenon oscillations and to implement design improvements.
			A. The following changes were made to meet the requirement for automatic protection against axial xenon oscillations:
			1. The high local power density trip is added; 2. The thermal margin/low pressure trip is replaced by the low DNBR trip; 3. The core protection calculators (CPCs) are added to provide the high local power density and low DNBR trips and the thermal margin/low pressure calculator is eliminated.
			B. As a consequence of the above addition of the CPCs the following design changes are implemented: 1. The low reactor coolant flow trip function is incorporated into the low DNBR and high LPD trip. 2. Reactor coolant flowrate is calculated by use of reactor coolant pump speed vice being inferred by differential pressure measurements; 3. CEA position signals are incorporated into the RPS; 4. Variable overpower trip (VOPT) function is incorporated into the low DNBR and high LPD trips. C. A high logarithmic power level trip has replaced the high rate of change of power trip in order to provide improved protection against inadvertent boron dilution. It also addresses the unplanned withdrawal of CEAs as the previous trip did.

Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 5 of 10)

	Item	System Described in FSAR Section	Reason for Change
11.	Engineered safety feature actuation system	7.3	The engineered safety feature actuation system (ESFAS) has been changed in the following areas: A. The containment purge isolation signal (CPIS) is separated from the ESFAS. B. The emergency feedwater actuation signal (EFAS) is added to the ESFAS. C. Variable setpoints for SIAS on low pressurizer pressure and MSIS on low steam generator pressure are added. D. The group actuation and group testing capability is added.
			The net effect of the changes described above is an improvement in overall plant safety. None of the above changes will result in reduced safety. A discussion of the safety implication of each individual change follows:

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Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 6 of 10)

	Item	System Described in FSAR Section	Reason for Change
	Engineered safety feature actuation system (cont)		A. The containment purge isolation signal (CPIS) is separated from the plant protection system. The purpose of the CPIS is to provide a signal to isolate the purge system of the containment building in the event of a high radiation level caused by a LOCA or a high radiation level caused by a fuel handling accident. In the case of the LOCA, protective action is provided by the containment isolation actuation signal (CIAS) initiated on high containment pressure. Since the fuel handling accident can occur only during shutdown periods, it is desirable to make this signal independent of the plant protection system.
			B. The addition of EFAS will improve plant safety since the operator will not be required to take immediate action on the auxiliary feedwater system following a large steam line break or loss of feedwater incident.
			C. The variable setpoints for low pressurizer pressure and low steam generator pressure improve plant safety since they provide their protective function over a wider range of plant conditions.

Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 7 of 10)

	Item	System Described in FSAR Section	Reason for Change
	Engineered safety feature actuation system (cont)		D. The addition of group actuation does not affect plant safety. The addition of group testing allows for a more comprehensive test program and thus should improve system reliability and safety.
12.	Control systems not required for safety	7.7	The control systems not required for safety have been modified in the following major areas: A. Deleted B. The fixed in-core detector system has been expanded to 56 detector strings with 5 rhodium detectors and 1 thermocouple per string. C. The core operating limit supervisory system (COLSS) has been added.
			The reasons for these changes are: A. Deleted B. The fixed in-core detector system was expanded to 56 strings of 5 detectors to reflect the change to a 16 x 16 core.

Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 8 of 10)

	Item	System Described in FSAR Section	Reason for Change
	Control systems not required for safety (cont)		C. The COLSS consists of sensors, an algorithm implemented in the plant computer, and other equipment to monitor selected nuclear steam supply system parameters and process the parameter information so that a comprehensive online calculation of the margin to specified limiting conditions of operation is available at all times. The COLSS also provides the operator with an alarm so that the reactor core can be maintained within the limiting conditions of operation during steady-state operation by adjusting appropriate plant parameters whenever any one of the monitored core conditions reaches its specified limiting condition of operation. This system is described further in section 7.7.
13.	120-Volt ac instrument power supply	8.3.1	The 120-volt ac instrument power system was modified to meet the intent of Regulatory Guide 1.75. The changes accomplished the following: A. Provided a separate and independent 120-volt ac instrument power source for non-class 1E loads. B. Provided a separate and redundant 120-volt ac instrument power source for Class 1E loads.

Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 9 of 10)

	Item	System Described in FSAR Section	Reason for Change
14.	125-volt dc system	8.3.2	The 125-volt dc system was modified to meet the intent of Regulatory Guides 1.75 and 1.81. The changes were made to accomplish the following: A. Provide a separate and independent 125-volt dc system for each unit. B. Provide a separate and independent 125-volt dc system for non-Class 1E loads. C. Provide separate and redundant 125-volt dc channels for Class 1E loads.
15.	Class 1E and Non-Class 1E circuit routing	8.3.3	Deleted requirement that non-class 1E circuits and Class 1E circuits may share the same cable trays provided the routing is controlled such that the non-class IE circuit will not cross over into other redundant Class 1E cable trays. The change was made to meet the intent of Regulatory Guide 1.75.
16.	Salt water cooling pumps	9.2.5	Increase the number of salt water cooling pumps from three pumps per unit to four pumps per unit. This change is based on increasing system flexibility and availability of the ultimate heat sink during heat treatment operations.

Table 1.3-3
SIGNIFICANT DESIGN CHANGES (Sheet 10 of 10)

	Item	System Described in FSAR Section	Reason for Change
17.	Condensate storage tank	10.4.7	Two condensate storage tanks are provided in lieu of one. One Seismic Category I 150,000-gallon-capacity tank provides water to the two auxiliary feedwater pumps through separate suction lines. The capacity of this tank is adequate to keep the plant in hot standby for approximately 1 hour and then cool down. The other tank is a Seismic Category II 500,000-gallon-capacity tank and provides the normal demands of the condensate feedwater cycle. It can also provide backup water to the Seismic Category I tank.
18.	Codes and standards (Excluding ASME Section III)	3.2	The effective edition of selected codes and standards as delineated in the PSAR have been updated to later editions of such codes and standards. The project design has been developed using these later codes and standards. Such practice is consistent with the 10CFR50.55 (a) requirements related to the design and construction of ASME Section III components. It is project practice to use the edition of various codes and standards in effect as of the date of purchase order of the affected component.
19.	Cable insulation	8.3.1.1.3	Minimum bend radii specified by the project cable suppliers for their specific types of cable construction are used in the cable installation in the plant in lieu of values for general cable constructions as shown in IPCEA Standards S-61-402, WC-7-1971, and S-19-81. The minimum bending radii for all cable under tension during installation is based on project cable suppliers' requirements. The permanent trained condition as given by the cable manufacturers are applied to the installation of Class 1E power cable only. Permanent trained multiconductor control and instrumentation cable is not maintained to a radius based on overall cable outside diameter. Since individual conductors being protected within the multiconductor cables have individual diameters substantially smaller than the overall cable diameter, voltage and current densities are considerably less than the voltage and current rating of the cable. Circuits are tested for functional operability after the cable is installed.

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Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 1 of 18)

Regulation (10CFR)	Compliance
20.1(a)	This regulation states the general purpose for which the Part 20 regulations are established and does not impose any independent obligations on licensees.
20.1(b)	This regulation describes the overall purpose of the Part 20 regulations to control the possession, use, and transfer of licensed material by any licensee, so that the total dose to an individual will not exceed the standards prescribed therein. It does not impose any independent obligations on licensees.
20.1(c)	Conformance with the ALARA principle stated in this regulation is ensured by the implementation of Company policies and appropriate Technical Specifications and health physics procedures. Chapters 11 and 12 of the FSAR describe the specific equipment and design features utilized in this effort.
20.2	This regulation states the extent of application of the Part 20 regulations and imposes no independent obligations on those licensees to which they apply.
20.3	The definitions contained in this regulation are adhered to in all appropriate Technical Specifications and procedures and in applicable sections of the FSAR.
20.4	The units of radiation dose specified in this regulation are accepted and conformed to in all applicable station procedures.
20.5	The units of radioactivity specified in this regulation are accepted and conformed to in all applicable station procedures.
20.6	This regulation governs the interpretation of regulations by the NRC and does not impose independent obligations on licensees.
20.7	This regulation gives the address of the NRC and does not impose independent obligations on licensees.
20.101	The radiation dose limits specified in this regulation are complied with through the implementation of and adherence to administrative policies and controls and appropriate health physics procedures developed for this purpose. Conformance is documented by the use of appropriate personnel monitoring devices and the maintenance of all required records.
20.102	When required by this regulation, the accumulated dose for any individual permitted to exceed the exposure limits specified in 20.101(a) is determined by the use of Form NRC-4. Appropriate health physics procedures and administrative policies control this process.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 2 of 18)

Regulation (10CFR)	Compliance
20.103(a)	Compliance with this regulation is ensured through the implementation of appropriate health physics procedures relating to air sampling for radioactive materials and bioassay of individuals for internal contamination. Administrative policies and controls provide adequate margins of safety for the protection of individuals against intake of radioactive materials. The systems and equipment described in chapters 11 and 12 of the FSAR provide the capability to minimize these hazards.
20.103(b)	Appropriate process and engineering controls and equipment, as described in chapters 11 and 12 of the FSAR, are installed and operated to maintain levels of airborne radioactivity as low as reasonably achievable.
20.103(c)	This regulation allows credit in estimating individual exposures for operators who are wearing respiratory protective equipment. Operating manuals contain procedures that ensure that approved respiratory protection equipment is being properly used and that plant practices are in compliance with Regulatory Guide 8.15, Acceptable Programs for Respiratory Protection.
20.103(d)	This regulation describes further restrictions which the Commission may impose on licensees. It does not impose any independent obligations on licensees.
20.103(e)	The proper notification specified by this regulation will be made to the appropriate authority within the appropriate time limit.
20.103(f)	Plant respiratory protection programs were not in effect prior to December 29, 1976 and, therefore, the regulation does not apply.
20.104	Conformance with this regulation is ensured by appropriate Southern California Edison Company policies regarding employment of individuals under the age of 18 and the station Radiation Protection Manual (RPM) restricting these individuals' access to the station restricted areas.
20.105(a)	Chapters 11 and 12 of the FSAR provide the information and related radiation dose assessments specified by this regulation.
20.105(b)	The radiation dose rate limits specified in this regulation are complied with through the implementation of station procedures, Technical Specifications, and administrative policies which control the use and transfer of radioactive materials. Appropriate surveys and monitoring devices document this compliance.
20.106(a)	Conformance with the limits specified in this regulation is ensured through the implementation of station procedures and applicable Technical Specifications which provide adequate sampling, analyses, and monitoring of radioactive materials in effluents prior to and during their release. The level of radioactivity in station effluents is minimized to the extent practicable by the use of appropriate equipment designed for this purpose, as described in chapter 11 of the FSAR.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 3 of 18)

Regulation (10CFR)	Compliance
20.106(b) 20.106(c)	SCE has not and does not currently intend to include in any license or amendment application proposed limits higher than those specified in 20.106(a), as provided for in these regulations.
20.106(d)	Appropriate allowances for dilution and dispersion of radioactive effluents are made in conformance with this regulation and are described in detail in chapter 11 of the FSAR and in appropriate reports required by the Technical Specifications.
20.106(e)	This regulation provides criteria by which the Commission may impose further limitations on releases of radioactive materials made by a licensee. It imposes no independent obligations on licensees.
20.106(f)	This regulation states that the provisions of 20.106 do not apply to disposal of radioactive material into sanitary sewage systems. It imposes no independent obligations on licensees.
20.107	This regulation clarifies that the Part 20 regulations are not intended to apply to the intentional exposure of patients to radiation for the purpose of medical diagnosis or therapy. It does not impose any independent obligations on licensees.
20.108	Necessary bioassay equipment and procedures, including whole body counting, are utilized at San Onofre Nuclear station to determine exposure of individuals to concentrations of radioactive materials. Appropriate health physics procedures and administrative policies implement this requirement.
20.201	The surveys required by this regulation are performed at adequate frequencies and contain sufficient detail to be consistent with the radiation hazard being evaluated. Applicable health physics procedures require these surveys and provide for their documentation in such a manner as to ensure compliance with the regulations of 10CFR20.
20.202(a)	Applicable health physics procedures set forth policies and practices which ensure that all individuals are supplied with and are required to use appropriate personnel monitoring equipment. Work procedures are established to provide additional control of personnel working in radiation areas and to ensure that the level of protection afforded to these individuals is consistent with the radiological hazards in the work place.
20.202(b)	The terminology set forth in this regulation is accepted and conformed to in all applicable station procedures, Technical Specifications, and those portions of the station Radiation Protection Manual in which its use is made.
20.203(a)	All materials used for labeling, posting, or otherwise designating radiation hazards or radioactive materials, and using the radiation symbol, conform to the conventional design prescribed in this regulation.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 4of 18)

Regulation (10CFR)	Compliance
20.203(b)	This regulation is conformed to through the implementation of appropriate health physics procedures and portions of the Radiation Protection Manual relating to posting of radiation areas, as defined in 10CFR Part 20.202(b) (2).
20.203(c)	The requirements of this regulation for "High Radiation Areas" are conformed to by the implementation of the Technical Specifications and appropriate health physics procedures, as well as the station Radiation Protection Manual. The controls and other protective measures set forth in the regulation are maintained under the surveillance of the station Health Physics Group.
20.203(d)	Each airborne radioactivity area, as defined in this regulation, is required to be posted by provisions of the Radiation Protection Manual and appropriate health physics procedures. These procedures also provide for the surveillance requirements necessary to determine airborne radioactivity levels.
20.203(e)	The area and room posting requirements set forth in this regulation pertaining to radioactive materials are complied with through the implementation of appropriate health physics procedures and portions of the station Radiation Protection Manual.
20.203(f)	The container labeling requirements set forth in this regulation are complied with through the implementation of appropriate health physics procedures and portions of the station Radiation Protection Manual.
20.204	The posting requirement exceptions described in this regulation are used where appropriate and necessary at the station. Adequate controls are provided within the station health physics procedures to ensure safe and proper application of these exceptions.
20.205	All of the requirements of this regulation pertaining to procedures for picking up, receiving, and opening packages of radioactive materials are implemented by the station Radiation Protection Manual and appropriate health physics procedures. These procedures also provide for the necessary documentation to ensure an auditable record of compliance.
20.206	Appropriate health physics procedures set forth requirements for all radiation workers to receive training and instructions as required by 10CFR19.12.
20.207	The storage and control requirements for licensed materials in unrestricted areas are conformed to and documented through the implementation of station health physics procedures and applicable portions of the station Radiation Protection Manual.
20.301	The general requirements for waste disposal set forth in this regulation are complied with through station health physics procedures, the Technical Specifications, and the provisions of the station license. Chapter 11 of the FSAR describes the solid waste disposal system installed at the station.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 5 of 18)

Regulation (10CFR)	Compliance
20.302	No such application for proposed disposal procedures as described in this regulation is contemplated.
20.303	No such plans for disposal of licensed material by release into sanitary sewage systems as provided for in this regulation are contemplated.
20.304	No such disposal of licensed material by burial in soil; i.e., on-site burial, as provided for in this regulation, is contemplated.
20.305	No such incineration of licensed material as provided for in this regulation is contemplated.
20.401	All of the requirements of this regulation are complied with through the implementation of appropriate Technical Specifications and health physics procedures pertaining to records of surveys, radiation monitoring, and waste disposal. The retention periods specified for such records are also provided for in these specifications and procedures.
20.402	San Onofre nuclear station has established an appropriate inventory and control program to ensure strict accountability for all licensed radioactive materials. Reports of theft or loss of licensed material are required by reference to the regulations of 10CFR in the Technical Specifications.
20.403	Notifications of incidents, as described in this regulation, are assured by the requirements of the Technical Specifications, the station Radiation Protection Manual, and appropriate health physics procedures, which also provide for the necessary assessments to determine the occurrence of such incidents.
20.405	Reports of overexposures to radiation and the occurrence of excessive levels and concentrations, as required by this regulation, are provided for by reference in the Technical Specifications and in appropriate health physics procedures.
20.407	The personnel monitoring required by this regulation is provided for by the Technical Specifications. Appropriate health physics procedures establish the data base from which this report is generated.
20.408	The report of radiation exposure required by this regulation upon termination of an individual's employment or work assignment is generated through the provisions of a station health physics procedure.
20.409	The notification and reporting requirements of this regulation, and those referred to by it, are satisfied by the provisions of a station health physics procedure.
20.501	This regulation provides for the granting of exemptions from 10CFR Part 20 regulations, provided that such exemptions are authorized by law and will not result in undue hazard to life or property. It does not impose independent obligations on licensees.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 6 of 18)

Regulation (10CFR)	Compliance
20.502	This regulation describes the means by which the Commission may impose upon any licensee requirements which are in addition to the regulations of Part 20. It does not impose independent obligations on licensees.
20.601	This regulation describes the remedies which the Commission may obtain in order to enforce its regulations and sets forth those penalties or punishments which may be imposed for violations of its rules. It does not impose any independent obligations on licensees.
50.1	This regulation states the purpose of the Part 50 regulations and does not impose any independent obligations on licensees.
50.2	This regulation defines various terms and does not impose independent obligations on licensees.
50.3	This regulation governs the interpretation of the regulations by the NRC and does not impose independent obligations on licensees.
50.4	This regulation gives the address of the NRC and does not impose independent obligations on licensees.
50.5	This regulation addresses deliberate misconduct activities by SONGS Staff or contractors that causes a violation of any rule, regulation, order, or license issued by the NRC for SONGS. Compliance with this regulation is established in site procedures, directives, and orders.
50.7	This regulation states that discrimination against an employee or contractor for engagng in certain protected activities is prohibited. Compliance with this regulation is established in site procedures, directives, and orders.
50.8	This regulation states that the NRC may not collect information until it displays a currently valid Office of Managmeent and Budget (OMD) control number. This regulation does not impase any direct obligations on licensees.
50.9	This regulation states that information provided to the commission shall be complete and accurate in all material aspects. Compliance with this regulation is established in specific plant procedures and directives.
50.10 50.11	These regulations specify the types of activities that may not be undertaken without a license from the NRC. SCE does not propose to conduct any such activities at San Onofre 2 and 3 without an NRC license.
50.12	This regulation provides for the granting of exemptions from 10CFR Part 50 regulations, provided that such exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. It does not impose independent obligations on licensees.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 7 of 18)

Regulation (10CFR)	Compliance
50.13	This regulation says that a license applicant need not design against acts of war. It imposes no independent obligations on licensees.
50.20 50.21 50.22 50.23	These regulations describe the types of licenses that the NRC issues. They do not address the substantive requirements that an applicant must satisfy to qualify for such licenses.
50.30	This regulation sets forth procedural requirements for the filing of license applications concerning items such as place of filing, oath or affirmation, number of copies of application, application for operating license, filing fees, and an environmental report. The procedural requirements of this regulation have been met in the license application and will continue to be met for subsequent amendments to the license application.
50.31 50.32	These regulations permit more efficient organization of the license application and impose no independent obligations on licensees.
50.33	This regulation requires the licensee's application to contain certain general information, such as identification of the applicant, information about the applicant's financial qualifications and a list of regulatory agencies with jurisdiction over the applicant's rates and services. This information is provided in the operating license application.
50.33a	This regulation requires applicants for construction permits to submit information required for the antitrust review. The requirements set forth by this regulation were satisfied at the time the application for a construction permit was submitted.
50.34(a)	This regulation sets forth requirements which govern the content of technical information in the Preliminary Safety Analysis Report and is relevant to the construction permit stage. The requirements of this regulation were satisfied as part of the construction permit application.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 8 of 18)

Regulation (10CFR)	Compliance
50.34(b)	A Final Safety Analysis Report (FSAR) has been prepared and submitted. This report addresses, in the chapters indicated, the information required: (1) Site evaluation factors - chapter 2. (2) Structures, systems, and components - chapters 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 15. (3) Radioactive effluents and radiation protection - chapters 11 and 12. (4) Design and performance evaluation - ECCS performance is discussed and shown to meet the requirements of 10CFR50.46 in chapters 6 and 15. (5) Results of research program - chapter 1. (6) i Organization structure - chapter 13. ii Managerial and administrative controls - chapters 13 and 17. Chapter 17 discusses compliance with the quality assurance requirements of appendix B. iii Plans for preoperational testing and initial operations - chapter 14. iv Plans for conduct of normal operations - chapters 13 and 17. Surveillance and periodic testing are specified in the Technical Specifications. v Plans for coping with emergencies - Emergency Plan (see 50.47 and Appendix E). vi Technical Specifications - a site-specific set is being prepared in conjunction with the staff and will be appended to the operating license when approved. vii Potential hazards analysis (appendix 3B). (7) Technical qualifications - chapter 13. (8) Operator requalifications - chapter 13.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 9 of 18)

Regulation (10CFR)	Compliance
50.34(c) 50.34(d)	The information required in these sections has been submitted for San Onofre Nuclear Station under separate cover pursuant to Paragraph 2.790(d) 10CFR2, Rules of Practice. This information includes both the physical security plans and the safeguards contingency plans required by these regulations.
50.34(e)	This regulation sets forth the requirements for including in the construction permit application a description of the design objectives and the preliminary design of equipment to control the release of radioactive material in nuclear power reactor effluents. The requirement of this regulation was satisfied as part of the construction permit application.
50.34a	This regulation requires compliance with the design objectives for equipment to control radioactive material effluents in accordance with Appendix I to 10 CFR 50. Compliance with this regulation was established in the Environmental Report and Operating License Review.
50.35	This regulation is relevant to the construction permit stage rather than the operating license stage.
50.36	Technical Specifications are being prepared for implementation by SCE and will include 1) safety limits and limiting safety settings, 2) limiting conditions for operations, 3) surveillance requirements, 4) design features, and 5) administrative controls. Technical Specifications will take the form prescribed by NUREG-0212, Revision 1, dated August 1979, which are the "Standard Technical Specifications for Combustion Engineering Pressurized Water Reactors."
50.36a	Radiological Effluent Technical Specifications (RETS) are being prepared for implementation by SCE, as required by this regulation. The RETS will be incorporated in the technical specifications referred to in 50.36 above.
50.36b	This regulation states that conditions to protect the environment may be included as an attachment to the plant license. This regulation does not impose direct obligations on the licensee.
50.37	This regulation requires the applicant to agree to limit access to restricted data. This requirement was satisfied at the time of application for the construction permit.
50.38	This regulation prohibits the NRC from issuing a license to any person who is a citizen, national, or agent of a foreign country or any corporation or other entity which is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government. SCE is eligible to apply for and obtain a license as stated in their applications for operating licenses. Therefore, the requirements of this regulation are not applicable.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 10 of 18)

Regulation (10CFR)	Compliance
50.39	This regulation provides that applications and related documents may be made available for public inspection. This imposes no direct obligations on applicants and licensees.
50.40	This regulation provides considerations to "guide" the Commission in granting licenses, as follows:
50.40(a)	The design and operation of the facility is to provide reasonable assurance that the health and safety of the public will not be endangered. The basis for SCE's assurance that the regulations will be met and the public protected is contained in this document and in the license application and the related correspondence over the years. Moreover, the lengthy process by which the plant is designed, constructed, and reviewed, including reviews by the architect-engineer, the NSSS vendor, the Southern California Edison staff, the NRC Staff, and the ACRS provides a great deal of assurance that the public health and safety will not be endangered.
50.40(b)	This regulation requires that the applicant be both technically and financially qualified to engage in the proposed activities as specified in the license application. The appointed hearing board will determine the level of technical and financial adequacy of SCE during hearings at the operating license stage.
50.40(c)	The issuance of a license to the applicant will not be inimical to the common defense and security or to the health and safety of the public. The individual showings of compliance with particular regulations contained in this section as well as the contents of the FSAR and related correspondence on the record, plus the lengthy process of design, construction, and review by SCE, the architect-engineer, the NSSS vendor, and the government ensure that the license will not be inimical to the health and safety of the public. Compliance with the requirements in 10CFR50.40(a) demonstrate that a license will not be inimical to the common defense and security.
50.40(d)	The requirements set forth in this regulation have been satisfied in that Environmental Reports have been submitted in accordance with 10CFR51 as part of the operating license application.
50.41	This regulation applies to Class 104 licensees, such as those for devices used in medical therapy. SCE has not applied for a Class 104 license, and therefore 50.41 is not applicable.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 11 of 18)

Regulation (10CFR)	Compliance
50.42	This regulation requires the Commission to consider additional standards in determining whether or not a license should be issued; i.e., 1) that the proposed activities will serve a useful purpose proportionate to the quantities of special nuclear material or source material to be utilized and 2) that due account will be taken of the anti-trust advice provided by the Attorney General. Information pertinent to these standards was made known to the Commission at the construction permit stage 1) by the licensing board verification of the need for power and 2) by the Attorney General's satisfactory review of the anti-trust information.
50.43	This regulation imposes certain duties on the NRC and addresses the applicability of the Federal Power Act and the right of government agencies to obtain NRC licenses. It imposes no direct obligations on licensees.
50.44	SONGS was granted an exemption from certain requirements of 10 CFR 50.44 and 10 CFR 50, Appendix A, General Design Criterion 41. See subsection 6.2.5 for further details.
50.45	This regulation provides standards for construction permits rather than operating licenses and is therefore not pertinent to this operating license proceeding.
50.46	FSAR section 6.3 describes the emergency core cooling system and the methods used to analyze ECCS performance following the course of an accident. The result of the loss-of-coolant accident analysis presented in FSAR section 15.6 demonstrate conformance with 50.46.
50.47	This regulation provides standards for onsite and offsite emergency plans, refers to the requirements of Appendix (E), and establishes the requirement for FEMA review and NRC approval of the plans prior to issuance of an operating license. Emergency plans have been submitted and are in final stages of review and approval by FEMA/NRC. (Refer to NUREG-0712, Section 13.3, and Supplement 1, page 22-126).
50.48	This regulation imposes requirements for a fire protection plan that satisfies Criterion 3 of Appendix (A) of 10CFR50 and makes reference to Appendix (R) as defining the fire protection features required to satisfy the criterion. By NRC memorandum and order (CLI-80-21), this rule is not applicable to San Onofre 2 and 3 in its entirety but that the specific requirements III G, III J and III 0 of Appendix (R) must be implemented on a schedule approved by NRC. SCE has committed to make the required modifications and thereby complies with this rule as modified by CLI-80-21.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 12 of 18)

Regulation (10CFR)	Compliance
50.49	This regulation imposes requirements for environmental qualification of electrical equipment important to safety. Section 3.11 of the FSAR describes compliance with this regulation.
50.50	This regulation provides that the NRC will issue a license upon determining that the application meets the standards and requirements of the Atomic Energy Act and the regulations and that the necessary notifications other agencies or bodies have been duly made. It imposes no direct obligations on the licensees.
50.51	This regulation specifies the maximum duration of licenses. Compliance will be affected by the Commission's writing the license in order to comply.
50.52	This regulation provides for the combining in a single license of a number of activities. It imposes no independent obligation on the licensee.
50.53	This regulation provides that licenses are not to be issued for activities that are not under or within the jurisdiction of the United States. The operation of San Onofre 2 and 3 will be within the United States and subject to the jurisdiction of the United States, as is evident from the description of the facility in the operating license application.
50.54	This regulation specifies certain conditions that are incorporated in every license issued. Compliance is effected by including these conditions in the license when it is issued.
50.55	This regulation addresses conditions of construction permits, not operating licenses, and therefore it is not relevant at this time.
50.55a(a)(1)	Section 5.2 of the FSAR describes compliance with this regulation.
50.55a(a)(2)	This paragraph is general in nature leading into Paragraphs (c) through (i) of the regulation.
50.55a(b)(1) 50.55a(b)(2)	These paragraphs provide guidance concerning the approved edition and addenda of Sections III and XI of the ASME B&PV Code.
50.55a(c)	Design and fabrication of the reactor vessel were carried out in accordance with ASME Section III (1971 Edition, through Summer 1971 Addenda).
50.55a(d)	Reactor coolant system piping meets the requirements of ASME Section III (1971 Edition, through Summer 1972 Addenda).
50.55a(e)	Reactor coolant pumps meet the requirements of ASME Section III (1971 Edition, through Winter 1971 Addenda).
50.55a(f)	Reactor coolant system valves comply with the requirements found in ASME Section III (1971 Edition, through Summer and Winter 1973 Addenda, and 1974 Edition, through Winter 1974).
50.55a(g)	Inservice inspection (ISI) requirements delineated in this part are specified in the Technical Specifications.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 13 of 18)

Regulation (10CFR)	Compliance
50.55a(h)	As discussed in chapter 7, the protection systems meet IEEE 279-1971.
50.55a(i)	Fracture toughness requirements are set forth in Appendices G and H of 10CFR50. Section 5.3 of the FSAR details vessel material parameters.
50.56	This regulation provides that the Commission will, in the absence of good cause shown to the contrary, issue an operating license upon completion of the construction of a facility in compliance with the terms and conditions of the construction permit. This imposes no independent obligations on the applicant.
50.57(a)	This regulation requires the Commission to make certain findings prior to the issuance of an operating license.
50.57(b)	The license, as issued, will contain appropriate conditions to ensure that items of construction or modification are completed on a schedule acceptable to the Commission.
50.57(c)	This regulation provides for a low-power testing license.
50.58	This regulation provides for the review and report of the Advisory Committee on Reactor Safeguards.
50.59	This regulation provides for the licensing of certain changes, tests, and experiments at a licensed facility. Technical Specifications and procedures provide implementation of this regulation.
50.60	This regulation states the fracture toughness and material surveillance program requirements for the reactor coolant pressure boundary for normal operation. Compliance is established in the Technical Specifications and Chapter 5 of the UFSAR.
50.61	This regulation states the fracture toughness requirements for protection against pressurized thermal shock events. Compliance is established in the Technical Specifications and Chapter 5 of the UFSAR.
50.62	This regulation states the requirements for reduction of risk from anticipated transients without scram. Compliance is established in operating procedures. Further information is provided in UFSAR Sections 7.6.18, 7.6.19, and 15.10.8.
50.63	This regulation states the requirements to be able to withstand a loss of all alternating current power. Compliance is established in Technical Specification Bases 3.8.4 and Chapter 8 of the UFSAR.
50.65	This regulation states the requirements for monitoring the effectiveness of maintenance during all conditions of plant operation, including normal shutdown. SCE has committed to follow the guidance of NEI (NUMARC) 93-01. Compliance with this regulation is established in plant specific procedures.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 14 of 18)

Regulation (10CFR)	Compliance
50.66	This regulation states the requirements for thermal annealing of the reactor vessel when neutron irradiation has reduced fracture toughness. Compliance is established in UFSAR Section 5.3.1.6.
50.68	This regulation states the requirements for maintaining a monitoring system capable of detecting criticality. Compliance is established in UFSAR Section 9.1.
50.70	The Commission will assign resident inspectors to the San Onofre 2 and 3 station and space will be provided in conformance with 50.70(b)(1) through (3).
50.71	Records are and will be maintained in accordance with the requirements of sections (a) through (e) of this regulation and the license.
50.72	This regulation defines the requirements for reporting of significant events to NRC Operations Center. Appropriate operations and administrative station procedures will ensure compliance with this rule.
50.73	This regulation states the requirements for submitting a Licensee Event Report. Compliance is established in Technical Specifications Chapter 5.
50.74	This regulation states that a change in operator or senior operator status is to be reported to the Commission. Compliance is maintained with the implementation of INPO guidelines and plant procedures.
50.75	This regulation establishes the requirements for reporting and record keeping for decommissioning planning. This regulation also addresses the requirements for monies set aside for decommissioning activities. Compliance with this regulation is established in plant procedures and directives.
50.78	This regulation is in regard to implementation of the US/IAEA safeguards agreement and is applicable to holders of construction permits.
50.80	This regulation provides that licenses may not be transferred without NRC consent. No application for transfer is contemplated by SCE involving the San Onofre 2 and 3 station.
50.81	This regulation permits the creation of mortgages, pledges, and liens on licensed facilities, subject to certain provisions. The regulation prohibits secured creditors from violating the Atomic Energy Act and the Commission's regulations.
50.82	This regulation provides for the termination of licenses. It does not apply to the San Onofre 2 and 3 station because no termination of licenses has been requested.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 15 of 18)

Regulation (10CFR)	Compliance
50.90	This regulation governs applications for amendments to licenses. Future request for license amendments will be made in accordance with these requirements.
50.91	This regulation provides guidance to the NRC in issuing license amendments.
50.91	This regulation provides guidance to the NRC in issuing license amendments.
50.92	This regulation specifies the considerations that will guide the Commission in issuing amendments to a license.
50.100 50.101 50.102 50.103	These regulations govern the revocation, suspension, and modification of licenses by the Commission under unusual circumstances. No such circumstances are present and therefore these regulations are not applicable at this time.
50.109	This regulation specifies the conditions under which the NRC may require the backfitting of a facility. This regulation imposes no independent obligations on a licensee unless the NRC proposes a backfitting requirement and therefore this regulation is not applicable.
50.110	This regulation governs enforcement of the Atomic Energy Act, the Energy Reorganization Act of 1974, and the NRC's regulations and orders. No enforcement action is at issue in the San Onofre 2 and 3 proceeding, and therefore this regulation is not applicable at this time.
50.111	This regulation provides for criminal sanctions for violations of designated regulations.
50.120	This regulation states the requirements for training and qualification of nuclear plant personnel with the exception of licensed operators. SONGS compliance is maintained with the implementation of the INPO accredited training program. Further information is provided in UFSAR Chapter 13.
Appendix A	FSAR section 3.1 discusses the extent to which the design criteria for San Onofre 2 and 3 plant structures, systems, and components important to safety comply with Title 10, Code of Federal Regulations, Part 50 (10CFR50), Appendix A, General Design Criteria for Nuclear Power Plants (GDC). As presented in section 3.1, each criterion is first quoted and then discussed in enough detail to demonstrate compliance with each criterion. For some criteria, additional information may be required for a complete discussion. In some cases, detailed evaluations of compliance with the various general design criteria are incorporated in more appropriate FSAR sections, and are located by reference.
Appendix B	Chapter 17 of the FSAR describes in detail the provisions of the quality assurance program which have been implemented to meet all applicable requirements of Appendix B.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 16 of 18)

Regulation (10CFR)	Compliance
Appendix C	This appendix provides a guide for establishing an applicant's financial qualifications. Financial qualifications were established at the construction permit stage, and it was found that there is reasonable assurance that the funds needed to operate the facility in compliance with the Commission's regulations are available.
Appendix D	This appendix has been superseded by 10CFR Part 51. As noted in the discussion for 10CFR50.40(d), the requirements of Part 51 have been satisfied.
Appendix E	This appendix specifies requirements for emergency plans. Emergency plans are being developed to provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect the public's health and safety and prevent damage to property. The new criteria for emergency planning developed subsequent to the event at Three Mile Island, Unit 2, are being factored into the emergency planning preparation effort.
Appendix F	This appendix applies to fuel reprocessing plants and related waste management facilities, not to power reactors and is, therefore, not applicable..
Appendix G	Fracture toughness compliance can be found in FSAR section 5.3. Assurance of adequate fracture toughness of ferritic materials in the reactor coolant pressure boundary (ASME Code, Section III, Class 1 components) is provided by compliance with the requirements for fracture toughness testing included in NB-2300 to Section III of the ASME Code and Appendix G of 10CFR50.
Appendix H	Reactor vessel material surveillance program requirements are delineated in this part. Technical Specifications and operating procedures have been established to implement their requirements. Further information is provided in FSAR chapter 5.
Appendix I	This appendix provides numerical guides for design objectives and limiting conditions for operation to meet the criteria "as low as is reasonably achievable" for radioactive material in light water-cooled nuclear power reactor effluents. FSAR chapters 2, 11, and 12 discuss the extent to which the criteria for Appendix I are met.
Appendix J	Reactor containment leakage testing for water-cooled power reactors is delineated in this appendix. These requirements are given in the Technical Specifications. Additional information concerning compliance can be found in FSAR chapter 6, subsections 6.2.4 and 6.2.6.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 17 of 18)

Regulation (10CFR)	Compliance
Appendix K	This appendix specifies features of acceptable ECCS evaluation models. As stated in FSAR section 6.3, the ECCS subsystem functional parameters are integrated so that the Appendix K requirements are met over the range of anticipated accidents and single failure assumptions. In addition, the ECCS evaluation model used to demonstrate conformance with 10CFR50.46 (see FSAR section 15.6) is in conformance with Appendix K requirements.
Appendix L	This appendix identifies the information required to be submitted by the applicant to the Attorney General to satisfy the requirements when applying for a facility operating license. The requirements of this appendix were satisfied at the time of application for the operating license.
Appendix M	This appendix lists guidelines for the licensing of plants whose site requirements are not considered in the design of the plant structures. Since the site is considered in the plant design, this appendix is not applicable.
Appendix N	This appendix dictates the requirements applicable to duplicate plant designs on multiple sites. Since both units are on a common site this appendix is not applicable.
Appendix O	Appendix O dictates guidelines for the Staff in reviewing standardization of design. No independent obligation on the licensee is required.
Appendix P	Reserved.
Appendix Q	Appendix Q dictates guidelines for the Staff in review of early review of site and does not deal with operating license review.
Appendix R	This appendix specifies features of an acceptable fire protection program for nuclear generating stations operating prior to January 1, 1979 except to the extent set forth in Section 50.48(b). Guidance contained in Appendix A to BTP 9.5-1 and the requirements set forth in 50.48 define the essential elements for an acceptable fire protection program at nuclear power plants docketed for construction permits prior to July 1, 1976. SCE has submitted its fire protection program for NRC evaluation and the NRC has concluded that the program will satisfy the applicable requirements of this appendix.
100.1	This regulation is explanatory and does not impose independent obligations on licensees.
100.2	This regulation is explanatory. San Onofre 2 and 3 is not novel in design and is not unproven as a prototype or pilot plant.
100.3	This regulation is explanatory and does not impose independent obligations on licensees.

Table 1.3-4
COMPLIANCE WITH NRC REGULATIONS, 10CFR (Sheet 18 of 18)

Regulation (10CFR)	Compliance
100.10	The factors listed related to both the unit design and the site have been provided in the application. Site specifics, including seismology, meteorology, geology, and hydrology, are presented in chapter 2 of the FSAR. The exclusion area, low population zone, and population center distance are provided and described. The FSAR also describes the characteristics of reactor design and operation.
100.11	Exclusion areas have been established, as described in FSAR section 2.1. The low population zone for each unit has been established in accordance with this requirement.
100.11	The FSAR accident analyses, particularly those in chapters 6 and 15, demonstrate that offsite doses resulting from postulated accidents would not exceed the criteria in this section of the regulation.
Appendix A	Appendix A to 10CFR Part 100 provides seismic and geologic siting criteria for nuclear power plants. The Commission is in the process of determining the acceptability of San Onofre 2 and 3 on the seismic and geologic siting.