



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-361

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 78  
License No. NPF-10

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the license for San Onofre Nuclear Generating Station, Unit 2 (the facility) filed by Southern California Edison Company (SCE) on behalf of itself and San Diego Gas and Electric Company, the City of Riverside, California and the City of Anaheim, California (licensees) dated July 31, 1989 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

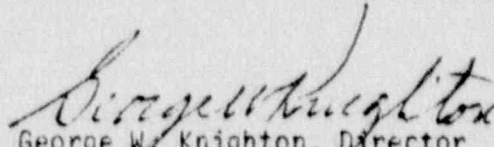
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-10 is hereby amended to read as follows:

(2) Technical Specification

The Technical Specifications contained in Appendix A, and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 78, are hereby incorporated in the license. SCE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and must be fully implemented no later than 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



George W. Knighton, Director  
Project Directorate V  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 9, 1969

ATTACHMENT TO LICENSE AMENDMENT NO. 78

FACILITY OPERATING LICENSE NO. NPF-10

DOCKET NO. 50-361

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change. Also enclosed are the following overleaf pages to the amended pages.

<u>AMENDMENT PAGE</u>	<u>OVERLEAF PAGE</u>
<u>XIX</u>	<u>XX</u>
3/4 1-20	3/4 1-19
3/4 1-20a	-
B 3/4 1-4	B 3/4 1-3
B 3/4 1-5	-
B 3/4 1-6	-



INDEX

LIST OF TABLES

---

---

<u>TABLE</u>		<u>PAGE</u>
1.1	OPERATIONAL MODES.....	1-7
1.2	FREQUENCY NOTATION.....	1-8
2.2-1	REACTOR PROTECTIVE INSTRUMENTATION TRIP SETPOINT LIMITS...	2-3
2.2-2	CORE PROTECTION CALCULATOR ADDRESSABLE CONSTANTS.....	2-5
3.1-1	CEA DROP TIME LIMITS.....	3/4 1-20a
3.3-1	REACTOR PROTECTIVE INSTRUMENTATION.....	3/4 3-3
3.3-2	REACTOR PROTECTIVE INSTRUMENTATION RESPONSE TIMES.....	3/4 3-8
4.3-1	REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-10
3.3-3	ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION.....	3/4 3-14
3.3-4	ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES.....	3/4 3-22
3.3-5	ENGINEERED SAFETY FEATURES RESPONSE TIMES.....	3/4 3-27
4.3-2	ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-31
3.3-6	RADIATION MONITORING ALARM INSTRUMENTATION.....	3/4/3-35
4.3-3	RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4/3-38
3.3-7	SEISMIC MONITORING INSTRUMENTATION.....	3/4 3-43
4.3-4	SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-44
3.3-8	METEOROLOGICAL MONITORING INSTRUMENTATION.....	3/4 3-46
4.3-5	METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-47
3.3-9	REMOTE SHUTDOWN MONITORING INSTRUMENTATION.....	3/4 3-49
4.3-6	REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-50

INDEX

LIST OF TABLES

---

---

<u>TABLE</u>		<u>PAGE</u>
3.3-10	ACCIDENT MONITORING INSTRUMENTATION.....	3/4 3-52
4.3-7	ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-54
3.3-11	FIRE DETECTION INSTRUMENTS.....	3/4 3-57
3.3-12	RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION...	3/4 3-64
4.3-8	RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-66
3.3-13	RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION..	3/4 3-69
4.3-9	RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-71
4.4-1	MINIMUM NUMBER OF STEAM GENERATORS TO BE INSPECTED DURING INSERVICE INSPECTION.....	3/4 4-14
4.4-2	STEAM GENERATOR TUBE INSPECTION.....	3/4 4-15
3.4-1	REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES.....	3/4 4-19
3.4-2	REACTOR COOLANT SYSTEM CHEMISTRY.....	3/4 4-21
3.4-3	LOW TEMPERATURE RCS OVERPRESSURE PROTECTION RANGE.....	3/4 4-30a
4.4-3	REACTOR COOLANT SYSTEM CHEMISTRY LIMITS SURVEILLANCE REQUIREMENTS.....	3/4 4-22
4.4-4	PRIMARY COOLANT SPECIFIC ACTIVITY SAMPLE AND ANALYSIS PROGRAM.....	3/4 4-25
4.4-5	REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM-WITHDRAWAL SCHEDULE.....	3/4 4-28
4.6-1	TENDON SURVEILLANCE.....	3/4 6-12
4.6-2	TENDON LIFT-OFF FORCE.....	3/4 6-12a
3.6-1	CONTAINMENT ISOLATION VALVES.....	3/4 6-20
3.7-1	STEAM LINE SAFETY VALVES PER LOOP.....	3/4 7-2
3.7-2	MAXIMUM ALLOWABLE LINEAR POWER LEVEL-HIGH TRIP SETPOINT WITH INOPERABLE STEAM LINE SAFETY VALVES DURING OPERATION WITH BOTH STEAM GENERATORS.....	3/4 7-3

## REACTIVITY CONTROL SYSTEMS

### POSITION INDICATOR CHANNEL - SHUTDOWN

#### LIMITING CONDITION FOR OPERATION

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3.1.3.3 At least one CEA Reed Switch Position Transmitter indicator channel shall be OPERABLE for each shutdown, regulating or part length CEA not fully inserted.

APPLICABILITY: MODES 3\*, 4\* and 5\*.

#### ACTION:

With less than the above required position indicator channel(s) OPERABLE, immediately open the reactor trip breakers.

#### SURVEILLANCE REQUIREMENTS

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4.1.3.3 Each of the above required CEA Reed Switch Position Transmitter indicator channel(s) shall be determined to be OPERABLE by performance of a CHANNEL FUNCTIONAL TEST at least once per 18 months.

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\* With the reactor trip breakers in the closed position.



## REACTIVITY CONTROL SYSTEMS

### CEA DROP TIME

#### LIMITING CONDITION FOR OPERATION

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3.1.3.4 The full length (shutdown and regulating) CEA arithmetic average and the individual CEA drop times, from a withdrawn position greater than or equal to 145 inches, shall be within at least one of the limit sets of Table 3.1-1. The drop time shall be from when power is interrupted to the CEA drive mechanism until the CEA reaches its 90 percent insertion position with:

- a.  $T_{avg}$  greater than or equal to 520°F, and
- b. All reactor coolant pumps operating.

APPLICABILITY: MODES 1 and 2.

#### ACTION:

- a. With either the arithmetic average CEA drop time OR any individual CEA drop time determined to exceed the limits, restore the CEA drop time to within the limits prior to proceeding to Modes 1 or 2.

#### SURVEILLANCE REQUIREMENTS

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4.1.3.4.1 The CEA drop time of full length CEAs shall be demonstrated through measurement prior to reactor criticality:

- a. For all CEAs following each removal and reinstallation of the vessel head,
- b. For all CEAs following any maintenance on or modification to the CEA drive system which could affect the drop time of those specific CEAs, and
- c. At least once per refueling interval.

4.1.3.4.2 For each CEA drop time measurement performed under surveillance 4.1.3.4.1, confirm that the appropriate CPC and COLSS addressable constant adjustments that conservatively bound both the arithmetic average CEA drop time AND the slowest individual CEA drop time measured have been made prior to reactor criticality.

TABLE 3.1-1  
CEA Drop Time Limits  
(Seconds)

SET	AVERAGE	INDIVIDUAL
I	< 3.0	< 3.2
II	< 3.2	< 3.4
III	< 3.4	< 3.6



## REACTIVITY CONTROL SYSTEMS

### BASES

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#### BORATION SYSTEMS (Continued)

The water volume limits are specified relative to the top of the highest suction connection to the tank. (Water volume below this datum is not considered recoverable for purposes of this specification.) Vortexing, internal structures and instrument error are considered in determining the tank level corresponding to the specified water volume limits.

The OPERABILITY of one boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

The limits on water volume and boron concentration of the RWST also ensure a pH value of greater than 7.0 for the solution recirculated within containment after a LOCA. This pH minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The maximum RWST volume is not specified since analysis of pH limits and containment flooding post-LOCA considered RWST overflow conditions.

#### 3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) the potential effects of CEA misalignments are limited to acceptable levels.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met.

The ACTION statements applicable to a stuck or untrippable, CEA to two or more inoperable CEAs and to a large misalignment (greater than or equal to 19 inches) of two or more CEAs, require a prompt shutdown of the reactor since either of these conditions may be indicative of a possible loss of mechanical functional capability of the CEAs and in the event of a stuck or untrippable CEA, the loss of SHUTDOWN MARGIN.

For small misalignments (less than 19 inches) of the CEAs, there is 1) a small effect on the time dependent long term power distributions relative to those used in generating LCOs and LSSS setpoints, 2) a small effect on the available SHUTDOWN MARGIN, and 3) a small effect on the ejected CEA worth used in the safety analysis. Therefore, the ACTION statement associated with small misalignments of CEAs permits a one hour time interval during which attempts may be made to restore the CEA to within its alignment requirements. The one hour time limit is sufficient to (1) identify causes of a misaligned CEA, (2) take appropriate corrective action to realign the CEAs and (3) minimize the effects of xenon redistribution.

## REACTIVITY CONTROL SYSTEM

### BASES

#### MOVABLE CONTROL ASSEMBLIES (Continued)

The CPCs provide protection to the core in the event of a large misalignment (greater than or equal to 19 inches) of a CEA by applying appropriate penalty factors to the calculation to account for the misaligned CEA. However, this misalignment would cause distortion of the core power distribution. This distribution may, in turn, have a significant effect on (1) the available SHUT-DOWN MARGIN, (2) the time dependent long term power distributions relative to those used in generating LCOs and LSSS setpoints, and (3) the ejected CEA worth used in the safety analysis. Therefore, the ACTION statement associated with the large misalignment of a CEA requires a prompt realignment of the misaligned CEA.

The ACTION statements applicable to misaligned or inoperable CEAs include requirements to align the OPERABLE CEAs in a given group with the inoperable CEA. Conformance with these alignment requirements bring the core, within a short period of time, to a configuration consistent with that assumed in generating LCO and LSSS setpoints. However, extended operation with CEAs significantly inserted in the core may lead to perturbations in (1) local burn-up, (2) peaking factors and (3) available shutdown margin which are more adverse than the conditions assumed to exist in the safety analyses and LCO and LSSS setpoints determination. Therefore, time limits have been imposed on operation with inoperable CEAs to preclude such adverse conditions from developing.

Operability of at least two CEA position indicator channels is required to determine CEA positions and thereby ensure compliance with the CEA alignment and insertion limits. The CEA "Full In" and "Full Out" limits provide an additional independent means for determining the CEA positions when the CEAs are at either their fully inserted or fully withdrawn positions. Therefore, the ACTION statements applicable to inoperable CEA position indicators permit continued operations when the positions of CEAs with inoperable position indicators can be verified by the "Full In" or "Full Out" limits. Setting the "RSPT/CEAC Inoperable" addressable constant in the CPC's to indicate to the CPC's that one or both of the CEAC's is inoperable does not necessarily constitute the inoperability of the RSPT rod indications from the respective CEAC. Operability of the CEAC rod indications is determined from the normal surveillance.

CEA positions and OPERABILITY of the CEA position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

The arithmetic average CEA drop time restrictions are consistent with the CEA drop times used in the safety analysis. The maximum individual CEA drop time restrictions are used to limit the CEA drop time distributions about the average. COLSS and CPC addressable constant adjustments have been conservatively



## REACTIVITY CONTROL SYSTEMS

### BASES

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#### MOVABLE CONTROL ASSEMBLIES (Continued)

determined to accommodate these CEA drop time combinations. The appropriate set of adjustment factors that bound both the arithmetic average CEA drop time and the slowest individual CEA drop time are installed prior to criticality following the performance of the CEA drop time surveillance. Measurement with  $T_{avg}$  greater than or equal to 520°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions.

Any fuel management change that significantly affects the core wide axial or radial power profiles, such as axial blankets or ultra-low leakage fuel management, will necessitate reverification of the average CEA drop time analysis. Changes that would significantly affect the CEA drop-time distribution, such as changes to the CEDM circuits, large increases in the core flow pressure drop, changes in the total drop weight of the CEAs or changes in the location of the CEAs, will require reverification of the average CEA drop-time concept. Barring these types of changes or failure to meet the new technical specification limits, reverification of the average drop-time analysis will not be required on a cycle-by-cycle basis.

The establishment of LSSS and LCOs require that the expected long and short term behavior of the radial peaking factors be determined. The long term behavior relates to the variation of the steady state radial peaking factors with core burnup and is affected by the amount of CEA insertion assumed, the portion of a burnup cycle over which such insertion is assumed and the expected power level variation throughout the cycle. The short term behavior relates to transient perturbations to the steady-state radial peaks due to radial xenon redistribution. The magnitudes of such perturbations depend upon the expected use of the CEAs during anticipated power reductions and load maneuvering. Analyses are performed based on the expected mode of operation of the NSSS (base load maneuvering, etc.) and from these analyses CEA insertions are determined and a consistent set of radial peaking factors defined. The Long Term Steady State and Short Term Insertion Limits are determined based upon the assumed mode of operation used in the analyses and provide a means of preserving the assumptions on CEA insertions used. The limits specified serve to limit the behavior of the radial peaking factors within the bounds determined from analysis. The actions specified serve to limit the extent of radial xenon redistribution effects to those accommodated in the analyses. The Long and Short Term Insertion Limits of Specification 3.1.3.6 are specified for the plant which has been designed for primarily base loaded operation but which has the ability to accommodate a limited amount of load maneuvering.



## REACTIVITY CONTROL SYSTEMS

### BASES

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#### MOVABLE CONTROL ASSEMBLIES (Continued)

The Transient Insertion Limits of Specification 3.1.3.6 and the Shutdown CEA Insertion Limits of Specification 3.1.3.5 ensure that 1) the minimum SHUTDOWN MARGIN is maintained, and 2) the potential effects of a CEA ejection accident are limited to acceptable levels. Long term operation at the Transient Insertion Limits is not permitted since such operation could have effects on the core power distribution which could invalidate assumptions used to determine the behavior of the radial peaking factors.

The Part Length CEA Insertion Limits of Specification 3.1.3.7 ensure that adverse power shapes and rapid local power changes which affect radial peaking factors and DNB considerations do not occur as a result of a part length CEA group covering the same axial segment of the fuel assemblies for an extended period of time during operation.

The CEA fully withdrawn position is defined to be greater than or equal to 145 inches. The extreme limits of CEA travel, fully withdrawn and fully inserted, may be described as the upper electrical limit and lower electrical limit respectively.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

DOCKET NO. 50-362

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 66  
License No. NPF-15

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the license for San Onofre Nuclear Generating Station, Unit 2 (the facility) filed by Southern California Edison Company (SCE) on behalf of itself and San Diego Gas and Electric Company, the City of Riverside, California and the City of Anaheim, California (licensees) dated July 31, 1989 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

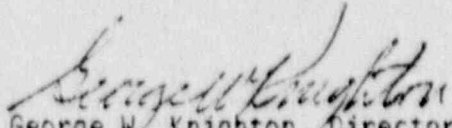
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-15 is hereby amended to read as follows:

(2) Technical Specification

The Technical Specifications contained in Appendix A, and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 66, are hereby incorporated in the license. SCE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and must be fully implemented no later than 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
George W. Knighton, Director  
Project Directorate V  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 9, 1989



ATTACHMENT TO LICENSE AMENDMENT NO. 66

FACILITY OPERATING LICENSE NO. NPF-15

DOCKET NO. 50-362

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change. Also enclosed are the following overleaf pages to the amended pages.

AMENDMENT PAGE

XVIII  
3/4 1-20  
3/4 1-20a  
B 3/4 1-4  
B 3/4 1-5  
B 3/4 1-6

OVERLEAF PAGE

XVII  
3/4 1-19  
-  
B 3/4 1-3  
-  
-

INDEX

LIST OF TABLES

<u>TABLE</u>		<u>PAGE</u>
1.1	OPERATIONAL MODES.....	1-7
1.2	FREQUENCY NOTATION.....	1-8
2.2-1	REACTOR PROTECTIVE INSTRUMENTATION TRIP SETPOINT LIMITS....	2-3
2.2-2	CORE PROTECTION CALCULATOR ADDRESSABLE CONSTANTS.....	2-5
3.1-1	CEA DROP TIME LIMITS.....	3/4 1-20a
3.3-1	REACTOR PROTECTIVE INSTRUMENTATION.....	3/4 3-3
3.3-2	REACTOR PROTECTIVE INSTRUMENTATION RESPONSE TIMES.....	3/4 3-8
4.3-1	REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-10
3.3-3	ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION.....	3/4 3-14
3.3-4	ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES.....	3/4 3-22
3.3-5	ENGINEERED SAFETY FEATURES RESPONSE TIMES.....	3/4 3-27
4.3-2	ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-31
3.3-6	RADIATION MONITORING ALARM INSTRUMENTATION.....	3/4 3-35
4.3-3	RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-38
3.3-7	SEISMIC MONITORING INSTRUMENTATION.....	3/4 3-43
4.3-4	SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-44
3.3-8	METEOROLOGICAL MONITORING INSTRUMENTATION.....	3/4 3-46
4.3-5	METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-47
3.3-9	REMOTE SHUTDOWN MONITORING INSTRUMENTATION.....	3/4 3-49
4.3-6	REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-50
3.3-10	ACCIDENT MONITORING INSTRUMENTATION.....	3/4 3-52

INDEX

LIST OF FIGURES

---

---

<u>FIGURE</u>		<u>PAGE</u>
3.1-1	MINIMUM BORIC ACID STORAGE TANK VOLUME AND TEMPERATURE AS A FUNCTION OF STORED BORIC ACID CONCENTRATION.....	3/4 1-13
3.1-2	CEA INSERTION LIMITS VS FRACTION OF ALLOWABLE THERMAL POWER.....	3/4 1-24
3.2-1	DNBR MARGIN OPERATING LIMIT BASED ON COLSS.....	3/4 2-7
3.2-2	DNBR MARGIN OPERATING LIMIT BASED ON CORE PROTECTION CALCULATORS (COLSS OUT OF SERVICE).....	3/4 2-8
3.3-1	DEGRADED BUS VOLTAGE TRIP SETTING.....	3/4 3-40
4.4-1	TUBE WALL THINNING ACCEPTANCE CRITERIA.....	3/4 4-16
3.4-1	DOSE EQUIVALENT I-131 PRIMARY COOLANT SPECIFIC ACTIVITY LIMIT VERSUS PERCENT OF RATED THERMAL POWER WITH THE PRIMARY COOLANT SPECIFIC ACTIVITY >1.0 $\mu$ Ci/GRAM DOSE EQUIVALENT I-131.....	3/4 4-27
3.4-2	HEATUP RCS PRESSURE/TEMPERATURE LIMITATIONS FOR 0-5 YEARS.....	3/4 4-30
3.4-3	COOLDOWN RCS PRESSURE/TEMPERATURE LIMITATIONS FOR 0-5 YEARS.....	3/4 4-31
3.7-1	MINIMUM REQUIRED FEEDWATER INVENTORY FOR TANK T-121 FOR MAXIMUM POWER ACHIEVED TO DATE.....	3/4 7-7
5.1-1	EXCLUSION AREA.....	5-2
5.1-2	LOW POPULATION ZONE.....	5-3
5.1-3	SITE BOUNDARY FOR GASEOUS EFFLUENTS.....	5-4
5.1-4	SITE BOUNDARY FOR LIQUID EFFLUENTS.....	5-5
6.2-1	OFFSITE ORGANIZATION.....	6-3
6.2-2	UNIT ORGANIZATION.....	6-4
6.2-3	CONTROL ROOM AREA.....	6-6



## REACTIVITY CONTROL SYSTEMS

### POSITION INDICATOR CHANNEL - SHUTDOWN

#### LIMITING CONDITION FOR OPERATION

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3.1.3.3 At least one CEA Reed Switch Position Transmitter indicator channel shall be OPERABLE for each shutdown, regulating or part length CEA not fully inserted.

APPLICABILITY: MODES 3\*, 4\* and 5\*.

ACTION:

With less than the above required position indicator channel(s) OPERABLE, immediately open the reactor trip breakers.

#### SURVEILLANCE REQUIREMENTS

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4.1.3.3 Each of the above required CEA Reed Switch Position Transmitter indicator channel(s) shall be determined to be OPERABLE by performance of a CHANNEL FUNCTIONAL TEST at least once per 18 months.

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\* With the reactor trip breakers in the closed position.

## REACTIVITY CONTROL SYSTEMS

### CEA DROP TIME

#### LIMITING CONDITION FOR OPERATION

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3.1.3.4 The full length (shutdown and regulating) CEA arithmetic average and the individual CEA drop times, from a withdrawn position greater than or equal to 145 inches, shall be within at least one of the limit sets of Table 3.1-1. The drop time shall be from when power is interrupted to the CEA drive mechanism until the CEA reaches its 90 percent insertion position with:

- a.  $T_{avg}$  greater than or equal to 520°F, and
- b. All reactor coolant pumps operating.

APPLICABILITY: MODES 1 and 2.

#### ACTION:

- a. With either the arithmetic average CEA drop time OR any individual CEA drop time determined to exceed the limits, restore the CEA drop time to within the limits prior to proceeding to Modes 1 or 2.

#### SURVEILLANCE REQUIREMENTS

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4.1.3.4.1 The CEA drop time of full length CEAs shall be demonstrated through measurement prior to reactor criticality:

- a. For all CEAs following each removal and reinstallation of the vessel head,
- b. For all CEAs following any maintenance on or modification to the CEA drive system which could affect the drop time of those specific CEAs, and
- c. At least once per refueling interval.

4.1.3.4.2 For each CEA drop time measurement performed under surveillance 4.1.3.4.1, confirm that the appropriate CPC and COLSS addressable constant adjustments that conservatively bound both the arithmetic average CEA drop time AND the slowest individual CEA drop time measured have been made prior to reactor criticality.

TABLE 3.1-1  
 CEA Drop Time Limits  
 (Seconds)

SET	AVERAGE	INDIVIDUAL
I	$\leq 3.0$	$\leq 3.2$
II	$\leq 3.2$	$\leq 3.4$
III	$\leq 3.4$	$\leq 3.6$



## REACTIVITY CONTROL SYSTEMS

### BASES

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#### BORATION SYSTEMS (Continued)

The water volume limits are specified relative to the top of the highest suction connection to the tank. (Water volume below this datum is not considered recoverable for purposes of this specification.) Vortexing, internal structures and instrument error are considered in determining the tank level corresponding to the specified water volume limits.

The OPERABILITY of one boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

The limits on water volume and boron concentration of the RWST also ensure a pH value of greater than 7.0 for the solution recirculated within containment after a LOCA. This pH minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The maximum RWST volume is not specified since analysis of pH limits and containment flooding post-LOCA considered RWST overflow conditions.

#### 3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) the potential effects of CEA misalignments are limited to acceptable levels.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met.

The ACTION statements applicable to a stuck or untrippable CEA, to two or more inoperable CEAs and to a large misalignment (greater than or equal to 19 inches) of two or more CEAs, require a prompt shutdown of the reactor since either of these conditions may be indicative of a possible loss of mechanical functional capability of the CEAs and in the event of a stuck or untrippable CEA, the loss of SHUTDOWN MARGIN.

For small misalignments (less than 19 inches) of the CEAs, there is 1) a small effect on the time-dependent long term power distributions relative to those used in generating LCOs and LSSS setpoints, 2) a small effect on the available SHUTDOWN MARGIN, and 3) a small effect on the ejected CEA worth used in the safety analysis. Therefore, the ACTION statement associated with small misalignments of CEAs permits a 1-hour time interval during which attempts may be made to restore the CEA to within its alignment requirements. The 1-hour time limit is sufficient to (1) identify causes of a misaligned CEA, (2) take appropriate corrective action to realign the CEAs and (3) minimize the effects of xenon redistribution.

## REACTIVITY CONTROL SYSTEMS

### BASES

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#### MOVABLE CONTROL ASSEMBLIES (Continued)

The CPCs provide protection to the core in the event of a large misalignment (greater than or equal to 19 inches) of a CEA by applying appropriate penalty factors to the calculation to account for the misaligned CEA. However, this misalignment would cause distortion of the core power distribution. This distribution may, in turn, have a significant effect on (1) the available SHUTDOWN MARGIN, (2) the time dependent long term power distributions relative to those used in generating LCOs and LSSS setpoints, and (3) the ejected CEA worth used in the safety analysis. Therefore, the ACTION statement associated with the large misalignment of a CEA requires a prompt realignment of the misaligned CEA.

The ACTION statements applicable to misaligned or inoperable CEAs include requirements to align the OPERABLE CEAs in a given group with the inoperable CEA. Conformance with these alignment requirements bring the core, within a short period of time, to a configuration consistent with that assumed in generating LCO and LSSS setpoints. However, extended operation with CEAs significantly inserted in the core may lead to perturbations in (1) local burn-up, (2) peaking factors and (3) available shutdown margin which are more adverse than the conditions assumed to exist in the safety analyses and LCO and LSSS setpoints determination. Therefore, time limits have been imposed on operation with inoperable CEAs to preclude such adverse conditions from developing.

Operability of at least two CEA position indicator channels is required to determine CEA positions and thereby ensure compliance with the CEA alignment and insertion limits. The CEA "Full In" and "Full Out" limits provide an additional independent means for determining the CEA positions when the CEAs are at either their fully inserted or fully withdrawn positions. Therefore, the ACTION statements applicable to inoperable CEA position indicators permit continued operations when the positions of CEAs with inoperable position indicators can be verified by the "Full In" or "Full Out" limits.

CEA positions and OPERABILITY of the CEA position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

The arithmetic average CEA drop time restrictions are consistent with the CEA drop times used in the safety analysis. The maximum individual CEA drop time restrictions are used to limit the CEA drop time distributions about the average. COLSS and CPC addressable constant adjustments have been conservatively determined to accommodate these CEA drop time combinations. The appropriate set of adjustment factors that bound both the arithmetic average CEA drop time and the slowest individual CEA drop time are installed prior to criticality following the performance of the CEA drop time

## REACTIVITY CONTROL SYSTEMS

### BASES

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#### MOVABLE CONTROL ASSEMBLIES (Continued)

surveillance. Measurement with  $T_{avg}$  greater than or equal to 520°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions.

Any fuel management change that significantly affects the core wide axial or radial power profiles, such as axial blankets or ultra-low leakage fuel management, will necessitate reverification of the average CEA drop-time analysis. Changes that would significantly affect the CEA drop-time distribution, such as changes to the CEDM circuits, large increases in the core flow pressure drop, changes in the total drop weight of the CEAs or changes in the location of the CEAs, will require reverification of the average CEA drop-time concept. Barring these types of changes or failure to meet the new technical specification limits, reverification of the average drop-time analysis will not be required on a cycle-by-cycle basis.

The establishment of LSSS and LCOs require that the expected long and short term behavior of the radial peaking factors be determined. The long term behavior relates to the variation of the steady-state radial peaking factors with core burnup and is affected by the amount of CEA insertion assumed, the portion of a burnup cycle over which such insertion is assumed and the expected power level variation throughout the cycle. The short term behavior relates to transient perturbations to the steady-state radial peaks due to radial xenon redistribution. The magnitudes of such perturbations depend upon the expected use of the CEAs during anticipated power reductions and load maneuvering. Analyses are performed based on the expected mode of operation of the NSSS (base load maneuvering, etc.) and from these analyses CEA insertions are determined and a consistent set of radial peaking factors defined. The Long Term Steady-State and Short Term Insertion Limits are determined based upon the assumed mode of operation used in the analyses and provide a means of preserving the assumptions on CEA insertions used. The limits specified serve to limit the behavior of the radial peaking factors within the bounds determined from analysis. The actions specified serve to limit the extent of radial xenon redistribution effects to those accommodated in the analyses. The Long and Short Term Insertion Limits of Specification 3.1.3.6 are specified for the plant which has been designed for primarily base loaded operation but which has the ability to accommodate a limited amount of load maneuvering.

The Transient Insertion Limits of Specification 3.1.3.6 and the Shutdown CEA Insertion Limits of Specification 3.1.3.5 ensure that 1) the minimum SHUTDOWN MARGIN is maintained, and 2) the potential effects of a CEA ejection



## REACTIVITY CONTROL SYSTEMS

### BASES

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#### MOVABLE CONTROL ASSEMBLIES (Continued)

accident are limited to acceptable levels. Long term operation at the Transient Insertion Limits is not permitted since such operation could have effects on the core power distribution which could invalidate assumptions used to determine the behavior of the radial peaking factors.

The Part Length CEA Insertion Limits of Specification 3.1.3.7 ensure that adverse power shapes and rapid local power changes which affect radial peaking factors and DNB considerations do not occur as a result of a part length CEA group covering the same axial segment of the fuel assemblies for an extended period of time during operation.

The CEA fully withdrawn position is defined to be greater than or equal to 145 inches. The extreme limits of CEA travel, fully withdrawn and fully inserted, may be described as the upper electrical limit and lower electrical limit respectively.