

March 5, 1990

Mr. Harold B. Ray  
Vice President  
Southern California Edison Co.  
Irvine Operations Center  
23 Parker Street  
Irvine, California 92718

Mr. Gary D. Cotton  
Senior Vice President  
Engineering and Operations  
San Diego Gas & Electric Co.  
101 Ash Street  
San Diego, California 92112

Gentlemen:

SUBJECT: ISSUANCE OF AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NO. NPF-10, SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 2 (TAC NO. 75566)

The Commission has issued the enclosed amendment to Facility Operating License No. NPF-10 for San Onofre Nuclear Generating Station, Unit No. 2. The amendment consist of changes to the Technical Specifications in response to your application dated January 3, 1990. These requests were designated by you as PCN 313.

This amendment revises Technical Specification 3/4.7.6, "Snubbers." The change would, on a one time basis, defer reduced snubber visual inspection interval (124 days ± 25%), and extend the maximum inspection period for inaccessible snubbers from 18 months ± 25% to 20 months ± 25%.

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next regular bi-weekly Federal Register notice.

Also enclosed are pages XIV, XV, 3/4 3-67 for Unit 2 and page 3/4 4-28 for Unit 3 of the Technical Specifications. Unit 2 pages were revised in Amendment No. 83 and Unit 3 page was revised in Amendment No. 71. Through administrative error, Unit 2 page XIV should state 3/4.12.2 Land Use Census -- Deleted, page XV should have a vertical line indicating page was shifted and page 3/4 3-67 removed the source check column. Unit 3 page 3/4 4-28, Section 3.4.8.1, line 4 was incorrect. It should read "...3.4-5 during heatup, cooldown, criticality, and inservice leak and hydrostatic..."

Sincerely,

ORIGINAL SIGNED BY L. KOKAJKO

Lawrence E. Kokajko, Project Manager  
Project Directorate V  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 85 to License No. NPF-10
- 2. Safety Evaluation

\*See previous concurrence  
 DRSP/PD5      DRSP/PD5\*  
 PShea          LKokajko:dr  
 2/ /90          2/7/90

NRR/EMEB\*  
 LMarsh  
 2/15/90

OGC\*  
 2/23/90

DRSP/PD:PD5  
 CMTramme11  
 3/6/90

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

March 5, 1990

Docket No. 50-361

Mr. Harold B. Ray  
Vice President  
Southern California Edison Co.  
Irvine Operations Center  
23 Parker Street  
Irvine, California 92718

Mr. Gary D. Cotton  
Senior Vice President  
Engineering and Operations  
San Diego Gas & Electric Co.  
101 Ash Street  
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Sincerely,

A handwritten signature in cursive script, appearing to read "Lawrence E. Kokajko".

Lawrence E. Kokajko, Project Manager  
Project Directorate V  
Division of Reactor Projects - III,  
IV, V and Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 85 to License No. NPF-10
2. Safety Evaluation

Messrs Ray and Cotton  
Southern California Edison Company

San Onofre Nuclear Generating  
Station, Units 2 and 3

cc:

Charles R. Kocher, Esq.  
James A. Beoletto, Esq.  
Southern California Edison Company  
Irvine Operations Center  
23 Parker  
Irvine, California 92718

Mr. F. B. Marsh, Project Manager  
Bechtel Power Corporation  
P.O. Box 60860  
Terminal Annex  
Los Angeles, California 90060

Orrick, Herrington & Sutcliffe  
ATTN: David R. Pigott, Esq.  
600 Montgomery Street  
San Francisco, California 94111

Mr. Robert G. Lacy  
Manager, Nuclear Department  
San Diego Gas & Electric Company  
P. O. Box 1831  
San Diego, California 92112

Alan R. Watts, Esq.  
Rourke & Woodruff  
701 S. Parker St. No. 7000  
Orange, California 92668-4702

Mr. John Hickman  
Senior Health Physicist  
Environmental Radioactive Mgmt. Unit  
Environmental Management Branch  
State Department of Health Services  
714 P Street, Room 616  
Sacramento, California 95814

Mr. Sherwin Harris  
Resource Project Manager  
Public Utilities Department  
City of Riverside  
3900 Main Street  
Riverside, California 92522

Resident Inspector, San Onofre NPS  
c/o U.S. Nuclear Regulatory Commission  
Post Office Box 4329  
San Clemente, California 92672

Mr. Charles B. Brinkman  
Combustion Engineering, Inc.  
12300 Twinbrook Parkway, Suite 330  
Rockville, Maryland 20852

Mayor, City of San Clemente  
San Clemente, California 92672

Mr. Phil Johnson  
U.S. Nuclear Regulatory Commission  
Region V  
1450 Maria Lane, Suite 210  
Walnut Creek, California 94596

Regional Administrator, Region V  
U.S. Nuclear Regulatory Commission  
1450 Maria Lane/Suite 210  
Walnut Creek, California 94596

Mr. Don Womeldorf  
Chief Environmental Management Branch  
California Department of Health  
714 P Street, Room 616  
Sacramento, California 95814

Chairman, Board of Supervisors  
San Diego County  
1600 Pacific Highway, Room 335  
San Diego, California 92101



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 NULCEAR GENERATING STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 85  
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 January 3, 1990 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.

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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 Specifications

The Technical Specifications contained in Appendix A, and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 85 , 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.

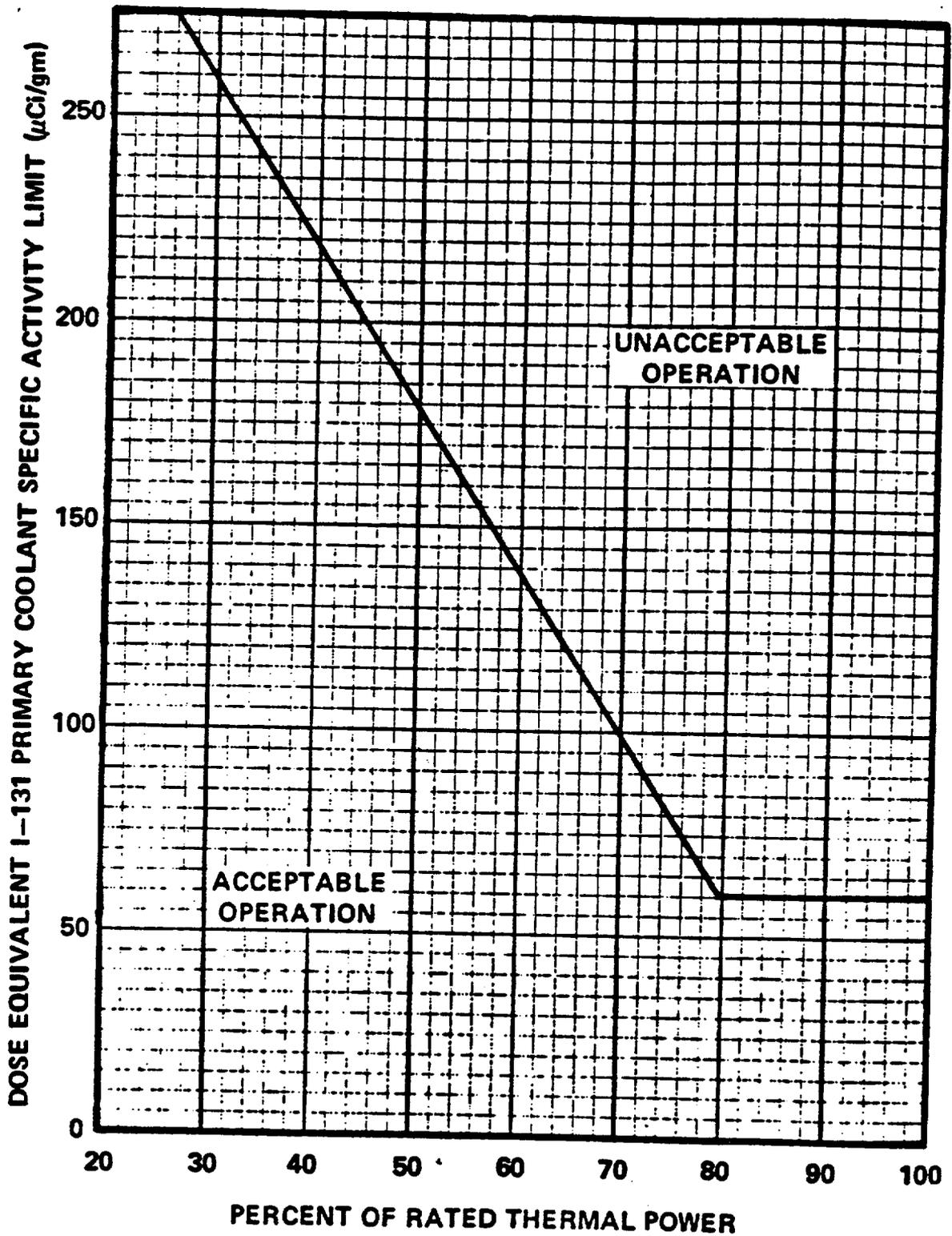
FOR THE NUCLEAR REGULATORY COMMISSION

*Charles M. Trammell*

Charles M. Trammell III, Acting 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: March 5, 1990



**FIGURE 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 μCi/gram Dose Equivalent I-131**

SAN ONOFRE-UNIT 3  
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3/4 4-77

## REACTOR COOLANT SYSTEM

### 3/4.4.8 PRESSURE/TEMPERATURE LIMITS

## REACTOR COOLANT SYSTEM

### LIMITING CONDITION FOR OPERATION

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3.4.8.1 With the reactor vessel head bolts tensioned\*, the Reactor Coolant System (except the pressurizer) temperature and pressure shall be limited in accordance with the limit lines shown on Figures 3.4-2, 3.4-3, 3.4-4, and 3.4-5 during heatup, cooldown, criticality, and inservice leak and hydrostatic testing with:

- a. A maximum heatup as specified by Figure 3.4-3 in any 1-hour period with RCS cold leg temperature less than 153°F. A maximum heatup of 60°F. in any 1-hour period with RCS cold leg temperature greater than 153°F.
- b. A maximum cooldown as specified by Figure 3.4-5 in any 1-hour period with RCS cold leg temperature less than 126°F. A maximum cooldown of 100°F in any 1-hour period with RCS cold leg temperature greater than 126°F.
- c. A maximum temperature change of 10°F in any 1-hour period during inservice hydrostatic and leak testing operations above the heatup and cooldown limit curves.
- d. A minimum temperature of 86°F to tension reactor vessel head bolts.

With the reactor vessel head bolts detensioned, the Reactor Coolant System (except the pressurizer) temperature shall be limited to a maximum heatup or cooldown of 60°F in any 1-hour period.

APPLICABILITY: At all times.

#### ACTION:

With any of the above limits exceeded, restore the temperature and/or pressure to within the limit within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System; determine that the Reactor Coolant System remains acceptable for continued operations or be in at least HOT STANDBY within the next 6 hours and reduce the RCS  $T_{avg}$  and pressure to less than 200°F and 500 psia, respectively, within the following 30 hours.

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\*With the reactor vessel head bolts detensioned, RCS cold leg temperature may be less than 86°F.

TABLE 4.3-9

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM				
a. Hydrogen Monitor (continuous)	D	Q(1)	M	**
b. Oxygen Monitor (continuous)	D	Q(2)	M	**
c. Hydrogen Monitor (periodic)	D	Q(1)	M	**
d. Oxygen Monitor (periodic)	D	Q(2)	M	**

SAN ONOFRE-UNIT 2

3/4 3-67

AMENDMENT NO. 83

TABLE 4.3-9 (Continued)

TABLE NOTATION

\*\* During waste gas holdup system operation (treatment for primary system offgases).

(1) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent hydrogen, balance nitrogen, and
2. Four volume percent hydrogen, balance nitrogen.

(2) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent oxygen, balance nitrogen, and
2. Four volume percent oxygen, balance nitrogen.

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ATTACHMENT TO LICENSE AMENDMENT NO. 85

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>
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## PLANT SYSTEMS

### BASES

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#### 3/4.7.6 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety related system.

For visual inspection snubbers are categorized into two (2) groups, those accessible and those inaccessible during reactor operation. For functional testing, snubbers are categorized into types by design and manufacturer, irrespective of capacity. For example, Pacific Scientific snubbers are divided into four types corresponding to different design features: PSA 1/4 and 1/2 are one type; PSA 1, 3, and 10 are another; PSA 6 is another; and PSA 35 and 100 are a fourth type.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number of inoperable snubbers found during an inspection. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule. Amendment No. 85 allows a one time extension of the inspection period during Cycle 5 operation while the NRC develops generic guidance applicable to 24 month operating cycles.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shut-downs at refueling intervals.

Hydraulic snubbers and mechanical snubbers may each be treated as a different entity for the above surveillance programs.

## PLANT SYSTEMS

### BASES

#### SNUBBERS (Continued)

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc.). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

#### 3/4.7.7 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values.

Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e. sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shield mechanism.

#### 3/4.7.8 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers, and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurance that the minimum OPERABILITY requirements of the fire suppression systems are met.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

<u>No. Inoperable Snubbers per Inspection Period</u>	<u>Subsequent Visual Inspection Period*# ##</u>
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3,4	124 days ± 25%
5,6,7	62 days ± 25%
8 or more	31 days ± 25%

The snubbers may be categorized into two groups: Those accessible and those inaccessible during reactor operation. Each group may be inspected independently in accordance with the above schedule.

c. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY, and (2) attachments to the foundation or supporting structure are secure, and (3) fasteners for attachment of the snubber to (a) the component or pipe and (b) the snubber anchorage are secure. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, provided that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible; and (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specification 4.7.6.e or 4.7.6.f, as applicable. However, when a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be determined inoperable and cannot be determined OPERABLE via functional testing for the purpose of establishing the next visual inspection interval. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers.

\*The inspection interval shall not be lengthened more than one step at a time.

#The provisions of Specification 4.0.2 are not applicable.

##20 months ± 25% for inspections conducted during the Cycle 5 refueling outage.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

d. Functional Tests

At least once per refueling interval during shutdown, a representative sample of at least 15% of the total of each type of snubber in use in the plant shall be functionally tested either in place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria of Specification 4.7.6.e or 4.7.6.f, an additional 15% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested.

The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers. At least 25% of the snubbers in the representative sample shall include snubbers from the following three categories:

1. The first snubber away from each reactor vessel nozzle
2. Snubbers within 5 feet of heavy equipment (valve, pump, turbine motor, etc.)
3. Snubbers within 10 feet of the discharge from a safety relief valve.

Snubbers that are especially difficult to remove or in high radiation zones during shutdown shall also be included in the representative sample.\*

In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of those snubbers may not be included for the re-sampling.

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\*Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NO. NPF-10

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 2

DOCKET NO. 50-361

1.0 INTRODUCTION

By letter dated January 3, 1990, Southern California Edison, et al. (SCE or the licensee) requested a change to the Technical Specifications for Facility Operating License No. NPF-10 that authorize operation of San Onofre Nuclear Generating Station, Unit No. 2 in San Diego County, California. The licensee proposed to revise Technical Specification (TS) 3/4.7.6, "Snubbers." The proposed change would, on a one time basis, defer reduced snubbers visual inspection interval (124 days  $\pm$  25%), and extend the maximum inspection period for inaccessible snubbers from 18 months  $\pm$  25% to 20 months  $\pm$  25%. Additionally, the TS bases would be modified to reflect this TS modification.

SCE is seeking this one time extension since San Onofre 2 cannot complete the current extended fuel cycle (Cycle 5) of operation (nominal 24 months) without exceeding the Technical Specification allowable visual surveillance period. In accordance with the surveillance requirements, the reduced inspection interval would require multiple plant shutdowns prior to the next refueling outage to visually inspect inaccessible snubbers. Performance of these snubber inspections with the unit at power would be impractical because the equipment is operating, is located in high radiation zones, and ladders and scaffolding would need to be erected for inspection. As a result, radiation "as low as reasonably achievable" (ALARA) goals would be difficult or impossible to maintain.

2.0 EVALUATION

Mechanical snubbers are designed to prevent shock forces from damaging piping and components, and to accommodate for thermal expansion and contraction in piping systems. The snubbers are attached to piping and support structures at both ends by load pins, which are secured by means of either snap rings, cotter pins, or with the load pin threaded and secured by nuts.

SCE found a total of four inoperable snubbers during the visual inspection surveillance period. Of these four inoperable snubbers, three snubbers were found to be unpinned. These snubbers were functionally stroke tested, determined to be operable and repinned. The remaining snubber was found to be frozen due to side loading, perhaps caused by personnel stepping on or bumping the snubber. This snubber was replaced with an operable snubber. As a result of these failures, the visual inspection surveillance interval was decreased.

SCE has identified a problem with snubber load pin retaining snap rings on snubbers. As a result, SCE has a snap ring replacement program for all types of snubbers. This program replaces the snap ring with cotter pin load pins which are less susceptible to vibration which could loosen and unpin a snubber. Also, SCE has a snubber reduction program to remove unnecessary snubbers from the plant. Finally, worker awareness of the importance and sensitivity of snubbers was increased by the placement of signs that specifically prohibit the use of snubbers as steps or as a handhold. This appears to have been effective as there have been no further instances of side loading.

The licensee states that SCE's snubber maintenance program for both San Onofre Units 2 and 3 has been very effective. Since 1983, Unit 2 had 7 failures out of 6,936 visual inspections. Similarly, Unit 3 had 6 failures out of 5,574 visual inspections. This indicates a failure rate of 1/10th of 1 percent. This data, in conjunction with the snap ring replacement program for accessible and inaccessible snubbers on Units 2 and 3, should indicate a decreasing number of failed snubbers in the future. Also, it should be noted that if an unscheduled outage of sufficient duration occurs, as many inaccessible snubbers as practical will be visually inspected, and the results factored into the snubber service life program and future inspection intervals.

A significant change in the operating status increases the probability of unusual plant occurrences that are more likely to occur during transient plant operation rather than full power steady state operation. Approval of this amendment would preclude a significant change in operating status.

Also, performing the visual inspections during the regularly scheduled refueling outage is most advantageous from an ALARA standpoint, because inaccessible area radiation dose will be substantially lower, and the outage duration is such that detailed radiation protection planning can be applied to the inspection program. The staff is currently developing generic guidelines which would allow utilities to visually inspect snubbers at their scheduled outages. This proposal satisfies the requirements of those guidelines.

SCE concludes that the probability of an inaccessible snubber failing before the Cycle 6 refueling outage has not increased due to the visual inspection failures found because the failures were due to a known cause which has been corrected on all appropriate snubbers. SCE's visual inspection program results have demonstrated a low failure rate, and the program should continue to maintain or reduce the failure rate. Therefore, waiving the reduced snubber visual inspection period and extending the period to encompass the refueling cycle on a one time basis would not be significantly detrimental to safety, and would avoid an unnecessary plant shutdown.

The proposed change by the licensee has been reviewed by the staff and was found to be acceptable. This modification to the TS will eliminate unnecessary testing of snubbers resulting in reduced man-rem exposure without undermining the effectiveness of the overall surveillance program. Additionally, it will preclude an unnecessary plant shutdown. Moreover, this amendment to the TS will allow a one time extension of the inspection period during Cycle 5 operation while the NRC staff develops generic guidance on snubber visual inspection surveillance intervals applicable to 24 month operating cycles. Therefore, based upon the above information, the staff approves the amendment for the one time extension to the snubber visual inspection period for San Onofre Nuclear Generating Station, Unit No. 2.

### 3.0 CONTACT WITH STATE OFFICIAL

The staff has advised the State Department of Health Services, State of California, of the proposed determination of no significant hazards consideration. No comments were received.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendments involve changes to requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes an inspection or surveillance requirement. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

5.0 CONCLUSION

We have concluded, based on the considerations discussed above that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; (2) such activities will be conducted in compliance with the Commission's regulations; and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Lawrence E. Kokajko

Dated: March 5, 1990

AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NO.

March 5, 1990

Docket File  
NRC & Local PDRs  
PD5 Plant File  
J. Zwolinski (13H24)  
P. Shea  
L. Kokajko  
OGC  
D. Hagan (MNBB 3302)  
E. Jordan (MNBB 3302)  
G. Hill (4) (P1-37)  
W. Jones (P-130A)  
J. Calvo (11F23)  
ACRS (10)  
GPA/PA  
ARM/LFMB  
L. Marsh