February 28, 1995

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

SUBJECT: ISSUANCE OF AMENDMENT FOR SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 2 (TAC NO. M86191) AND UNIT NO. 3 (TAC NO. M86192)

Dear Mr. Ray:

The Commission has issued the enclosed Amendment No.117 to Facility Operating License No. NPF-10 and Amendment No. 106 to Facility Operating License No. NPF-15 for San Onofre Nuclear Generating Station, Unit Nos. 2 and 3. The amendments consist of changes to the Technical Specifications (TS) in partial response to your application dated December 30, 1993, designated by you as PCN-299, as supplemented by letters dated June 3, 1994, August 25, 1994, January 3 and 19, 1995. By letter dated January 30, 1995, the licensee forwarded TS pages in the current format for the change approved by this amendment. Based on discussions with the licensee, the TS pages provided in the January 30, 1995, submittal were slightly rearranged for better readability.

These amendments will revise TS 3.9.4, "Containment Building Penetrations," and the associated bases to allow both doors of the containment personnel airlock to be open at the same time during refueling operations provided certain conditions are met.

A copy of our related Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,
Original signed by:
Mel B. Fields, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

070033

Docket Nos. 50-361 and 50-362

Enclosures: 1. Amendment No.117 to NPF-10
2. Amendment No.106 to NPF-15
3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION
Docket File
PUBLIC
OPA, O2G5
JRoe
TQuay
CGrimes, O11E22
Region IV
Perkins, RIV/WCFO
DFoster-Curseen
GHill (4), T5C3
OC/LFDCB, T9E10
PDIV-2 Reading
OGC, O15B18
ACRS (4), T2E26
MFields

NRC FILE CENTER COPY

DOCUMENT NAME: S023AMD.AIR * See previous concurrence

OFC	DRPW/LA	PDIV-2/PM	NRR:TERB	NRR:SCSB	OGC
NAME	DFoster-Curseen	MFields:ye	CMiller*	RBarrett*	CPW
DATE	2/15/95	2/28/95	2/13/95	2/14/95	2/21/95

OFFICIAL RECORD COPY

9503070301 950228
PDR ADOCK 05000361
P PDR

DF01

February 28, 1995

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

SUBJECT: ISSUANCE OF AMENDMENT FOR SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 2 (TAC NO. M86191) AND UNIT NO. 3 (TAC NO. M86192)

Dear Mr. Ray:

The Commission has issued the enclosed Amendment No.117 to Facility Operating License No. NPF-10 and Amendment No. 106 to Facility Operating License No. NPF-15 for San Onofre Nuclear Generating Station, Unit Nos. 2 and 3. The amendments consist of changes to the Technical Specifications (TS) in partial response to your application dated December 30, 1993, designated by you as PCN-299, as supplemented by letters dated June 3, 1994, August 25, 1994, January 3 and 19, 1995. By letter dated January 30, 1995, the licensee forwarded TS pages in the current format for the change approved by this amendment. Based on discussions with the licensee, the TS pages provided in the January 30, 1995, submittal were slightly rearranged for better readability.

These amendments will revise TS 3.9.4, "Containment Building Penetrations," and the associated bases to allow both doors of the containment personnel airlock to be open at the same time during refueling operations provided certain conditions are met.

A copy of our related Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,
Original signed by:
Mel B. Fields, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

070033

Docket Nos. 50-361 and 50-362

Enclosures: 1. Amendment No.117 to NPF-10
2. Amendment No.106 to NPF-15
3. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION
Docket File
PUBLIC
OPA, O2G5
JRoe
TQuay
CGrimes, O11E22
Region IV
Perkins, RIV/WCFO
DFoster-Curseen
GHill (4), T5C3
OC/LFDCB, T9E10
PDIV-2 Reading
OGC, O15B18
ACRS (4), T2E26
MFields

DOCUMENT NAME: S023AMD.AIR * See previous concurrence

OFC	DRPW/LA	PDIV-2/PM	NRR:TERB	NRR:SCSB	OGC
NAME	DFoster-Curseen	MFields:ye	CMiller*	RBarrett*	CPW
DATE	2/15/95	2/28/95	2/13/95	2/14/95	2/21/95

OFFICIAL RECORD COPY

DF01

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 28, 1995

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

SUBJECT: ISSUANCE OF AMENDMENT FOR SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 2 (TAC NO. M86191) AND UNIT NO. 3 (TAC NO. M86192)

Dear Mr. Ray:

The Commission has issued the enclosed Amendment No. 117 to Facility Operating License No. NPF-10 and Amendment No. 106 to Facility Operating License No. NPF-15 for San Onofre Nuclear Generating Station, Unit Nos. 2 and 3. The amendments consist of changes to the Technical Specifications (TS) in partial response to your application dated December 30, 1993, designated by you as PCN-299, as supplemented by letters dated June 3, 1994, August 25, 1994, January 3 and 19, 1995. By letter dated January 30, 1995, the licensee forwarded TS pages in the current format for the change approved by this amendment. Based on discussions with the licensee, the TS pages provided in the January 30, 1995, submittal were slightly rearranged for better readability.

These amendments will revise TS 3.9.4, "Containment Building Penetrations," and the associated bases to allow both doors of the containment personnel airlock to be open at the same time during refueling operations provided certain conditions are met.

A copy of our related Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Mel B. Fields

Mel B. Fields, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosures: 1. Amendment No.117 to NPF-10
2. Amendment No.106 to NPF-15
3. Safety Evaluation

cc w/encls: See next page

Mr. Harold B. Ray
Southern California Edison Company

San Onofre Nuclear Generating Station
Unit Nos. 2 and 3

cc:
Mr. R. W. Krieger, Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P. O. Box 128
San Clemente, California 92674-0128

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

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

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

Dr. Harvey Collins, Chief
Division of Drinking Water and
and Environmental Management
California Department of Health Services
P. O. Box 942732
Sacramento, California 94234-7320

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
Harris Tower & Pavilion
611 Ryan Plaza Drive, Suite 400
Arlington, Texas 76011-8064

Mr. Richard Krumvieda
Manager, Nuclear Department
San Diego Gas & Electric Company
P. O. Box 1831
San Diego, California 92111

Mr. Steve Hsu
Radiologic Health Branch
State Department of Health Services
Post Office Box 942732
Sacramento, California 94234

Resident Inspector/San Onofre NPS
c/o U.S. Nuclear Regulatory Commission
Post Office Box 4329
San Clemente, California 92674

Mayor
City of San Clemente
100 Avenida Presidio
San Clemente, California 92672

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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. 117
License No. NPF-10

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Southern California Edison Company, et al. (SCE or the licensee) dated December 30, 1993, as supplemented by letters dated June 3, 1994, August 25, 1994, and January 3, 19, and 30, 1995, 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 rules and 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 Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 117 , are hereby incorporated in the license. Southern California Edison Company 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

Mel B. Fields

Mel B. Fields, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 28, 1995

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 117 TO 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 the captioned amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE	INSERT
3/4 9-4	3/4 9-4
-	3/4 9-4a
B 3/4 9-1	B 3/4 9-1
B 3/4 9-2	B 3/4 9-2

REFUELING OPERATIONS

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts,

b. A minimum of one door in each airlock is closed,* and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by an isolation valve, blind flange, or manual valve, or

2. Be capable of being closed by an OPERABLE automatic containment purge valve.

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment building.

---

*Both doors of the containment personnel airlock may be open provided:

a. one personnel airlock door is OPERABLE, and

b1. the plant is in MODE 6 with 23 feet of water above the fuel in the reactor vessel, or

b2. defueled configuration with fuel in containment (i.e., fuel in refueling machine or upender).

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment purge valve within 72 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS or movement of irradiated fuel in the containment building by:

a. Verifying the penetrations are in their closed/isolated condition, or

b. Testing the containment purge valves per the applicable portions of Specification 4.6.3.2.

3/4.9 REFUELING OPERATIONS

BASES

3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analyses. The value of 0.95 or less for K_{eff} includes a 1% delta K/K conservative allowance for uncertainties. Similarly, the boron concentration value of 2350 ppm or greater also includes a conservative uncertainty allowance of 50 ppm boron.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

3/4.9.4 CONTAINMENT PENETRATIONS

The requirements on containment penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.

Operability of the containment airlock door requires that the door is capable of being closed; that the door is unblocked and no cables or hoses are being run through the airlock; and that a designated individual is continuously available to close the airlock door. This individual must be stationed at the outer airlock door.

3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during CORE ALTERATIONS.

3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements for the refueling machine ensure that: (1) the refueling machine will be used for movement of all fuel assemblies including those with a CEA inserted, (2) each machine has sufficient load capacity to lift a fuel assembly including those with a CEA, and (3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

Five finger CEAs are removed from the reactor vessel either along with the associated fuel bundle utilizing the refueling machine or can be removed without the associated fuel bundle utilizing the refueling machine auxiliary hoist. The four finger CEAs are inserted through the upper guide structure with two fingers in each of the two adjacent fuel bundles in the periphery of the core. The four finger CEAs are either removed with the upper guide structure and lift rig or can be removed with separate tooling prior to upper guide structure removal utilizing the auxiliary hoist of the polar crane or the refueling machine auxiliary hoist.

Coupling and uncoupling of the CEAs and the CEDM drive shaft extensions is accomplished using one of the gripper operating tools. The coupling and uncoupling is verified by weighing the drive shaft extensions.

3/4.9.7 FUEL HANDLING MACHINE - SPENT FUEL STORAGE BUILDING

A. Refueling Operations

The restriction on movement of loads in excess of the nominal weight of a fuel assembly, CEA and associated handling tool over other fuel assemblies in the storage pool ensures that in the event this load is dropped (1) the activity release will be limited to that contained in six fuel assemblies, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is based on the calculated results which demonstrate that, with credit taken for the fuel handling building filters, the offsite doses would be well within (less than 25%) the 10 CFR 100 limits.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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. 106
License No. NPF-15

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Southern California Edison Company, et al. (SCE or the licensee) dated December 30, 1993, as supplemented by letters dated June 3, 1994, August 25, 1994, and January 3, 19, and 30, 1995, 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 rules and 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 Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 106 , are hereby incorporated in the license. Southern California Edison Company 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

Mel B. Fields

Mel B. Fields, Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 28, 1995

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 106 TO 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 the captioned amendment number and contain marginal lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE	INSERT
3/4 9-4	3/4 9-4
-	3/4 9-4a
B 3/4 9-1	B 3/4 9-1
B 3/4 9-2	B 3/4 9-2

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment building penetrations shall be determined to be either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment purge valve within 72 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS or movement of irradiated fuel in the containment building by:

a. Verifying the penetrations are in their closed/isolated condition, or

b. Testing the containment purge valves per the applicable portions of Specification 4.6.3.2.

REFUELING OPERATIONS

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment door closed and held in place by a minimum of four bolts,

b. A minimum of one door in each airlock is closed,* and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by an isolation valve, blind flange, or manual valve, or

2. Be capable of being closed by an OPERABLE automatic containment purge valve.

APPLICABILITY: During CORE ALTERATIONS or movement of irradiated fuel within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or movement of irradiated fuel in the containment building.

---

*Both doors of the containment personnel airlock may be open provided:

a. one personnel airlock door is OPERABLE, and

b1. the plant is in MODE 6 with 23 feet of water above the fuel in the reactor vessel, or

b2. defueled configuration with fuel in containment (i.e., fuel in refueling machine or upender).

3/4.9 REFUELING OPERATIONS

BASES

3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analyses. The value of 0.95 or less for K_{eff} includes a 1% delta K/K conservative allowance for uncertainties. Similarly, the boron concentration value of 2350 ppm or greater also includes a conservative uncertainty allowance of 50 ppm boron.

3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core.

3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The requirements on containment penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.

Operability of the containment airlock door requires that the door is capable of being closed; that the door is unblocked and no cables or hoses are being run through the airlock; and that a designated individual is continuously available to close the airlock door. This individual must be stationed at the outer airlock door.

3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during CORE ALTERATIONS.

3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements for the refueling machine ensure that: (1) the refueling machine will be used for movement of all fuel assemblies including those witha a CEA inserted, (2) each machine has sufficient load capacity to lift a fuel assembly including those with a CEA, and (3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

Five finger CEAs are removed from the reactor vessel either along with the associated fuel bundle utilizing the refueling machine or can be removed without the associated fuel bundle utilizing the refueling machine auxiliary hoist. The four finger CEAs are inserted through the upper guide structure with two fingers in each of the two adjacent fuel bundles in the periphery of the core. The four finger CEAs are either removed with the upper guide structure and lift rig or can be removed with separate tooling prior to upper guide structure removal utilizing the auxiliary hoist of the polar crane or the refueling machine auxiliary hoist.

Coupling and uncoupling of the CEAs and the CEDM drive shaft extensions is accomplished using one of the gripper operating tools. The coupling and uncoupling is verified by weighing the drive shaft extensions.

3/4.9.7 FUEL HANDLING MACHINE - SPENT FUEL STORAGE BUILDING

A. Refueling Operation

The restriction on movement of loads in excess of the nominal weight of a fuel assembly, CEA and associated handling tool over other fuel assemblies in the storage pool ensures that in the event this load is dropped (1) the activity release will be limited to that contained in six fuel assemblies, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is based on the calculated results which demonstrate that, with credit taken for the fuel handling building filters, the offsite doses would be well within (less than 25%) the 10 CFR 100 limits.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 117 TO FACILITY OPERATING LICENSE NO. NPF-10

AND AMENDMENT NO. 106 TO FACILITY OPERATING LICENSE NO. NPF-15

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, UNITS 2 AND 3

DOCKET NOS. 50-361 AND 50-362

1.0 INTRODUCTION

By letter dated December 30, 1993, as supplemented by letters dated June 3, 1994, August 25, 1994, January 3 and 19, 1995, Southern California Edison Company, et al. (SCE or the licensee) submitted a request for changes to the Technical Specifications (TS) for San Onofre Nuclear Generating Station (SONGS), Unit Nos. 2 and 3. These submittals contain the licensee's justification to replace the current TS with a set of TS based on the CE Owners Group Improved Standard Technical Specifications (STS) issued by the NRC Staff as NUREG-1432 in September 1992. The adoption of Owners Group approved TS is part of an industry-wide initiative to standardize and improve TS. SONGS Units 2 and 3 are the lead plants for adoption of the CE Owners Group standardized TS.

This Safety Evaluation (SE) addresses the licensee's request to implement one provision of their new TS program in advance of the implementation of the entire program. This provision is a revision to TS 3.9.4, "Containment Building Penetrations," and the associated bases to allow both doors of the containment personnel airlock to be open at the same time during refueling operations provided certain conditions are met. By letter dated January 30, 1995, the licensee forwarded TS pages in the current format for the change evaluated by this SE. Based on discussions with the licensee, the TS pages provided in the January 30, 1995, submittal were slightly rearranged for better readability.

The initial notice in the Federal Register included the letters dated December 30, 1993, June 3, 1994, and August 25, 1994. The additional information contained in the January 3, 19, and 30, 1995, letters were clarifying in nature, within the scope of the initial notice and did not

affect the NRC staff's proposed no significant hazards consideration determination.

2.0 BACKGROUND

The containment serves to control fission product radioactivity that may be released from the reactor core following an accident, such that offsite radiation exposures are maintained well within the requirements of 10 CFR Part 100. Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions.

With the primary coolant system above 200°F and pressurized, the containment itself may become pressurized during an accident. Therefore, the containment and its penetrations must be operable by being capable of withstanding the pressure and thus prevent excessive fission product release to the environment.

During refueling operations, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The required condition is referred to as "containment closure" rather than "containment operability." Containment closure means that all potential escape paths are closed or capable of being closed. The closure restrictions are sufficient to restrict fission product radioactivity release from containment due to a fuel handling accident (FHA) inside containment during refueling.

The containment personnel airlock, which is also part of the containment pressure boundary, provides a means for personnel access. The personnel airlock has a door at both ends which are normally interlocked to prevent simultaneous opening when "containment operability" is required. During periods of unit shutdown when neither "containment operability" or "containment closure" are required, the door interlock mechanism may be disabled, allowing both doors of the airlock to remain open for extended periods when frequent containment entry is necessary.

During core alterations, the current TS require that one personnel airlock door be closed at all times. This means that personnel must enter one door with the other shut, shut the door just passed, then open the other door. This operation occurs many times a day during refueling outages and the excessive cycling of the doors results in the need for frequent maintenance of the door hinge pin, the door seals, the packing of the equalizing valve, and other components.

Other licensees have experienced similar difficulties. Calvert Cliffs Nuclear Power Plant submitted an amendment request dated November 5, 1993, which would, in part, allow the personnel airlock doors to remain open during core alterations. The amendment was issued on August 31, 1994, based primarily on the fact that calculated offsite dose and control room operator doses are within acceptable limits with the doors open following an FHA.

3.0 EVALUATION

The licensee proposes to modify TS 3.9.4 to allow both doors of the containment personnel airlock to be open at the same time during refueling operations provided certain conditions are met. These conditions are:

1. one personnel airlock door is OPERABLE, and

2. the plant is in MODE 6 with 23 feet of water above the fuel in the reactor vessel, or

3. defueled configuration with fuel in containment (i.e., fuel in refueling machine or upender).

Operability of the personnel airlock door is defined in the TS bases, and it requires that the door is capable of being closed; that the door is unblocked and no cables or hoses are being run through the airlock; and that a designated individual is continuously available to close the airlock door. This individual must be stationed at the outer airlock door.

Standard requirements regarding airlock penetration integrity during core alterations: The applicable staff positions regarding opening of airlock doors during Mode 6 (Refueling Operations) are stated in Section 3.9.3 (BASES) of the Improved Standard Technical Specifications (NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants" or "ISTS"). Text excerpted from the ISTS states:

> The containment airlocks, which are part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 operation. During periods of shutdown when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of an airlock to remain open for extended periods when frequent containment entry is necessary. During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, containment closure is required; therefore, the door interlock mechanism may remain disabled, but one airlock door must always remain closed.
>
> The requirements on containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted from escaping to the environment. The closure restrictions are sufficient to restrict fission product radioactivity release from containment due to a fuel handling accident during refueling.
>
> During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe

> radiological consequences result from a fuel handling accident. The fuel handling accident is a postulated event that involves damage to irradiated fuel. Fuel handling accidents include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The minimum decay time of [72] hours prior to CORE ALTERATIONS ensure[s] that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR Part 100. The acceptance limits for offsite radiation exposure are contained in Standard Review Plan Section 15.7.4, Rev. 1, which defines "well within" 10 CFR Part 100 to be 25% or less of the 10 CFR Part 100 values.

As noted above, the basis for the staff position against simultaneous opening of both airlock doors during core alterations is to limit fission product leakage in the event of a Fuel Handling Accident. In performing analyses of the radiological consequences of a Fuel Handling Accident, the containment isolation criteria of Standard Review Plan (SRP) Section 15.7.4 are used. If fuel handling is prohibited when the containment is open, radiological consequences need not be calculated. If the containment will be open during fuel handling operations, automatic isolation by radiation detection instrumentation must be provided for penetrations and calculations must demonstrate acceptable consequences. However, automatic isolation of airlock doors is not practicable. Standard Technical Specifications thus specify that airlock integrity be maintained during fuel handling in containment. However, the licensee has shown by analysis that the Standard Technical Specification requirement need not be applied to San Onofre Units 2 and 3.

San Onofre 2/3 Fuel Handling Accident Analysis: The licensee performed an analysis of a fuel handling accident with the personnel airlock doors open. In performing the analysis the licensee used the assumptions and methodology prescribed by Regulatory Guide (RG) 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors." A 72-hour decay time was assumed in the analysis. The licensee's analysis demonstrated that the 0-2 hour site boundary thyroid dose would be less than 72.7 Rem and the 0-2 hour whole body site boundary dose would be less than 0.3 Rem. These consequences are within the SRP limits of 75 Rem thyroid and 6 Rem Whole Body (WB).

Control Room Habitability Considerations: General Design Criteria (GDC) 19 specifies that adequate radiation protection is to be provided to permit access and occupancy of the control room under accident conditions without personnel exposures in excess of 5 Rem WB or its equivalent to any part of the body for the duration of the accident. The SRP limits are 5 Rem WB and 30 Rem Thyroid for the control room operator. The licensee's analysis demonstrated that the control room operator whole body dose would be less than 0.2 Rem and the thyroid dose would be less than 19.5 Rem.

Staff Confirmatory Analysis: The staff performed an independent analysis to confirm the licensee's results. The staff evaluated the radiological consequences resulting from a postulated fuel handling accident using accident source terms given in RG 1.4, "Assumptions Used for the Potential Radiological Consequences of a Loss of Coolant Accident for Pressurized Water Reactors," assumptions contained in RG 1.25, and the review procedures specified in SRP Section 15.7.5. The staff assumed an instantaneous puff release of noble gases and radioiodine from the gap of the broken fuel rods as gas bubbles pass up through the 23 feet of water covering the fuel. All airborne radioactivity reaching the containment atmosphere is assumed to be exhausted within 2 hours into the environment. All radioactive material in the fuel rod gap is assumed to have decayed for a period of 72 hours.

The staff computed the offsite doses for the San Onofre exclusion area boundary using the above assumptions and the NRC computer code, ACTICODE. The control room operator doses were computed using methodology given in SRP Section 6.4. The computed offsite doses are within the acceptance criteria given in SRP 15.7.5 and the computed control room operator doses meet the dose limits set forth in GDC 19. The resulting values of the offsite and control room operator doses calculated by the staff are listed in Table 1 and the assumptions used are listed in Table 2.

Based on the evaluation performed by the licensee and the staff's confirmatory analysis, the staff concludes that the radiological consequences of not having a closed containment following a fuel handling accident are acceptable. The steps taken by the licensee to optimize the ability of plant personnel to close the personnel airlock, if needed, provide assurance that offsite radiological consequences will be minimized to the extent practical. Based on these reasons, the staff approves the proposed changes to TS 3.9.4.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the California State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC 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 (59 FR 49434). 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 the amendments.

6.0 CONCLUSION

The Commission has 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: John L. Minns
Mel B. Fields

Attachments: 1. Calculated Radiolgical Consequences, Table 1
2. Assumptions used for Calculating Radiological Consequences, Table 2

Date: February 28, 1995

Table 1

CALCULATED RADIOLOGICAL CONSEQUENCES

Exclusion Area Boundary	Dose	SRP Limits
Whole Body	0.3 Rem	6 Rem
Thyroid	75 Rem	75 Rem
Control Room Operator	**Dose**	**GDC-19 Limits**
Whole Body	0.2 Rem	5 Rem
Thyroid	30 Rem	Equivalent to 5 Rem WB*

*Section 6.4 of the SRP defines the dose limit to the thyroid as 30 Rem.

TABLE 2

ASSUMPTIONS USED FOR CALCULATING RADIOLOGICAL CONSEQUENCES

Parameters	Quantity
Power Level, Mwt	3390
Number of Fuel Rods Damaged	236
Shutdown Time, hours	72
Power Peaking Factor	1.65
Fission-Product Release Fractions, %	
Iodine	10
Noble gases	30
Pool Decontamination Factors	
Iodine	100
Noble gases	1
Iodine Forms, %	
Elemental	75
Organic	25
Atmospheric Relative Concentration, sec/m^3	2.72E-4
Fission-Product Release Duration, hours	2
Dose Conversion Factors	ICRP-30
CONTROL ROOM	
Atmospheric Relative Concentration, sec/m^3	3.1E-3
Filter Recirculation Rate, cfm	2.97E+4
Unfiltered Inleakage, cfm	10
Filter Efficiency, %	95
Iodine Protection Factor	20.4
Geometry Factor	18
Control Room Volume, cubic feet	2.44E+5