UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. for a Class 103 License to Acquire, Possess, and Use a Utilization Facility as Part of Unit No. 2 of the San Onofre Nuclear Generating Station	)	Docket No. 50-361 Amendment Application No. 160

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. pursuant to 10 CFR 50.90, hereby submit Amendment Application No. 160. This amendment application consists of Proposed Change Number No. NPF-10-467 to Facility Operating License NPF-10. Proposed Change Number No. NPF-10-467 is a request to change Unit 2 Amendment No. 127 approved Technical Specifications by adding section 5.5.2.14, Barrier Control Program.

Subscribed on this 9th day of May, 1996.

Respectfully Submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

By: Dwight E. Nunn

Dwight E. Nunn

Vice President

State of California

County of San Diego

On 5/9/96 before me, Mariane Sanchez,

personally appeared DWIGHT E. NUNN, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature Mariane Sanchez

MARIANE SANCHEZ
COMM. # 1031763
Notary Public — California
ORANGE COUNTY
My Comm. Expires OCT 14, 1998

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. for a Class 103 License to Acquire, Possess, and Use a Utilization Facility as Part of Unit No. 3 of the San Onofre Nuclear Generating Station	)	Docket No. 50-362 Amendment Application No. 144

SOUTHERN CALIFORNIA EDISON COMPANY, ET AL. pursuant to 10 CFR 50.90, hereby submit Amendment Application No. 144. This amendment application consists of Proposed Change Number NPF-15-467 to Facility Operating License NPF-15. Proposed Change Number NPF-15-467 is a request to change the Unit 3 Amendment No. 116 approved Technical Specifications by adding section 5.5.2.14, Barrier Control Program.

Subscribed on this 9th day of May, 1996.

Respectfully Submitted,
SOUTHERN CALIFORNIA EDISON COMPANY

By: Dwight E. Nunn

Dwight E. Nunn
Vice President

State of California
County of San Diego
On 5/9/96 before me, Mariane Sanchez,
personally appeared Dwight E Nunn, personally known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature Mariane Sanchez

MARIANE SANCHEZ
COMM. # 1033763
Notary Public — California
ORANGE COUNTY
My Comm. Expires OCT 14, 1998

ENCLOSURE 1

DESCRIPTION AND SAFETY ANALYSIS
OF PROPOSED CHANGE NPF-10/15-467

DESCRIPTION AND SAFETY ANALYSIS
OF PROPOSED CHANGE NPF-10/15-467

Proposed Change Number (PCN) 467 is a request to add Section 5.5.2.14 to the Technical Specifications for San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 to maintain a Barrier Control Program.

Units 2 and 3 Technical Specifications

Unit 2 Amendment No. 127 and Unit 3 Amendment No. 116 Approved Technical Specifications

Unit 2: See Attachment "A"
Unit 3: See Attachment "B"

Proposed Technical Specifications

Unit 2: See Attachment "C"
Unit 3: See Attachment "D"

DESCRIPTION OF CHANGES:

This amendment request is to add the following section 5.5.2.14 to the Technical Specifications (TSs) to control barriers:

"Barrier Control Program

This program provides controls for plant barriers which protect structures, systems, and components from 1) missiles from internal sources and adjacent buildings, 2) flooding from tsunami, internal sources, and adjacent buildings, and 3) environmental hazards (such as steam and radiation). The normal configuration of these plant barriers is closed and functional. Barrier impairments are allowed if:

a. The average annual cumulative risk of fuel damage from design basis events attributable to barrier impairments does not exceed 1.0E-6. Barrier allowed outage times are based on typical times needed to restore the barrier, implement alternate barriers, remove the hazard(s), or implement compensatory measures. Barrier allowed outage times with compensatory measures in place are based on typical times needed to perform plant maintenance,

or

b. Justified by a 10CFR50.59 safety evaluation,

or

c. The protected equipment is declared INOPERABLE, or is not required to be OPERABLE."

BACKGROUND:

In September 1993, certain watertight doors, hatches, and penetration seals were removed from the Unit 3 Safety Equipment Building (SE) to support pre-outage construction activities. The watertight doors, hatches, and penetration seals are part of the barriers separating redundant trains of safety related equipment. An NRC inspector noticed this configuration and questioned whether these barriers, with the doors, hatches, and seals open, were able to perform their design functions and whether the effects of design basis events had been fully evaluated.

In response to the NRC inspector inquiry, Southern California Edison (Edison) initiated an investigation of the expected plant response to design basis events with the altered barrier configuration. An engineering evaluation concluded that potential design basis scenarios existed which could have adversely affected the ability to achieve and maintain cold shutdown. At this point, Edison restored all SE barriers to their original configurations.

Edison reported the Unit 3 condition to the NRC in Licensee Event Report 2-93-009 dated November 24, 1993. Subsequently, Edison committed to maintain interim administrative controls for the Units 2 and 3 plant barrier configurations, in accordance with 10 CFR 50.59 requirements, until a long-term barrier control program would be established (Letter from R. M. Rosenblum to B. H. Faulkenberry dated December 23, 1993).

The long-term barrier control program was to include appropriate control measures for each hazard barrier and eliminate the need to evaluate hazard barrier impairments on a case-by-case basis. The strategy to address this concern for the long-term program is to request a TS amendment that would decouple barrier functionality from equipment operability for a limited time. This is similar to the decoupling of safety system operability from that of some support systems (e.g., fire doors and snubbers) in the existing TSs.

DISCUSSION:

The long-term barrier control program addresses passive devices required to mitigate and protect the plant against the consequences of specific design basis hazard events defined in the Updated Final Safety Analysis Report (UFSAR). Currently, the only way a barrier may be opened is by the successful completion of a 10CFR50.59 safety analysis or by declaring "inoperable" the equipment protected by the barrier.

This amendment is to decouple equipment operability from barrier operability by a conservative Allowed Outage Time (AOT). The AOT for barrier impairments without compensatory actions is based on the lesser of 1) typical times needed to restore the barrier, implement alternate barriers, remove the hazard(s), or implement compensatory measures, or 2) average annual cumulative increase in fuel damage risk of <1.0E-6. The AOT for barrier impairments with compensatory actions is based on the lesser of 1) typical times needed to perform plant maintenance, or 2) average annual cumulative increase in fuel damage risk of <1.0E-6. This

change will facilitate maintenance and reduce the costs of the existing program by reducing the number of 10CFR50.59 evaluations for opening barriers.

Basing the AOT on fuel damage rather than core damage will extend the controls of the barrier control program to the spent fuel pool and the fuel handling building. Minimal impact on plant safety will be ensured by limiting the average annual cumulative risk of fuel damage due to barrier impairments to <1.0E-6, even though some barriers may affect both trains of safety systems simultaneously.

Edison intends to implement the long-term program through a Licensee Controlled Specification (LCS). An in-depth discussion, including the program description, scope, methodology, and draft Licensee Controlled Specification for Unit 2 are attached, for information only, as Enclosure 2 to this submittal.

The probabilistic risk assessment (PRA) supporting the LCS will calculate the fuel damage likelihood attributable to barrier impairment by multiplying the frequency of initiating events by the unavailability of one or more barriers required to ensure the operability of proximate risk-significant components and then by the conditional fuel damage probability given those components subsequently fail.

Initiating event frequencies are conservatively derived from generic industry data bases. Conditional fuel damage probabilities are calculated using the San Onofre probabilistic risk assessment models for at-power and shutdown conditions. Barrier unavailabilities assumed in the risk assessment were based on 1) frequencies of barrier impairments derived from historic records, and 2) durations of barrier impairments (i.e., allowed outage time) based on estimated future needs and risk-significance. A description of the probabilistic risk assessment (PRA) methodology supporting the LCS will be sent to the Document Control Desk by June 28, 1996.

NRC CONCERNS

A meeting was held on September 28, 1994, between members of the NRC staff and Edison to discuss Edison's methodology for the long-term barrier program. The barriers under consideration are located in all the buildings that contain equipment important to safety, with the exception of the containment buildings. The hazards discussed during this meeting were limited to internal missiles, internal floods, and equipment qualification hazards (steam and radiation). The other hazards controlled by barriers within the plant (e.g., fire and security hazards) are managed by separate established programs and would not be affected by the long-term barrier control program. The NRC staff noted three concerns as a result of this meeting.

1. *The results of the pilot program showed that many of the barriers could be inoperable for significant periods of time without exceeding the acceptance criteria chosen by the licensee, which is reflected by the lengthy allowable outage times (unlimited for some barriers) in the proposed administrative procedures. The licensee should select the allowable outage times based on the length of time these barriers are needed to be open, by applying the operating experience of the plant, and use the probabilistic acceptance criteria to support these outage times.*

   Resolution:

   The allowed outage times were re-evaluated using new criteria. The 12 hour AOT (without compensatory measures) is based on typical barrier repair time (e.g., water-tight doors), and the 7 day AOT (with compensatory measures) is based on major equipment overhaul time. There is also a more restrictive 2 hour AOT (without compensatory measures), which applies to critical circulating water system (CWS) flood barriers. The 2 hour AOT for these barriers is based on the time required to implement the applicable compensatory measures (e.g., Turbine Building flood watch and a berm).

2. *It would be more appropriate to apply the concept of a small increment in core damage frequency (i.e., 1.5% increase) to the entire proposed administrative controls program, rather than to each hazard's effect on each of the barriers. This more conservative approach would provide a clear understanding of the risks associated with the proposed changes.*

   Resolution:

   The risk associated with impaired barriers was re-evaluated to assess the cumulative effect of open barriers.

   The PRA model has two barrier categories: a) locked/secured movable barriers, and b) unlocked/unsecured movable barriers. Separate impairment frequencies were used for each category based on historical data. Impairment frequencies were further separated into shutdown and power operations. The effects of barrier impairments were evaluated during all modes of operation. Barrier allowed outage times were selected to limit the average annual cumulative probability of fuel damage from all barrier impairments to 1.0E-6. This acceptance criterion is an average value. While the contribution to fuel damage probability due to barrier impairments could exceed 1.0E-6 in a given year (although unlikely due to conservatism used in the PRA models), on average this contribution will be less than 1.0E-6/year.

   A permanent increase of 1.0E-6/year in San Onofre's fuel damage frequency would be characterized by the *PSA Applications Guide* (EPRI TR-105396) as "non-risk significant." The SONGS 2/3 Individual Plant Examination submitted April 29, 1993 reported a total core damage frequency 3.0E-5/yr.

3. *The use of allowed outage times in the technical specifications is an established method for permitting temporary deviations from the design basis of the plant. The use of this concept in administrative controls for this situation, and the possible implications of compliance with specific regulations (i.e., 10 CFR 50.49, environmental qualification of electrical equipment) needs to be carefully reviewed by both the licensee and the staff.*

   Resolution:

   As noted in the NRC concern, technical specifications are an established method for permitting temporary deviations from the design basis of the plant. Edison has therefore chosen this method to implement the long-term barrier program.

SAFETY ANALYSIS:

The proposed change described above shall be deemed to involve a significant hazards consideration if there is any positive finding in any one of the following areas.

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed change will allow a passive support system, plant barriers, to be taken out of service for a specific allowed outage time. Since the allowed outage times are to limit the average annual cumulative increase in fuel damage risk to less than 1.0E-6, there will not be a significant increase in either the probability or consequences of any accident previously evaluated.

   Additionally, the proposed change will allow barrier impairments if allowed by a 10CFR50.59 evaluation and also if the equipment is declared inoperable or is not needed. Since these two conditions are already a part of the San Onofre Units 2 and 3 Licensing Basis, there will be no change in the probability or consequences of an accident previously evaluated.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   Barriers have been analyzed for specific hazards. The nature of these hazards will not change due to this amendment, and therefore no new or different kind of accident will be created from any accident previously evaluated.

3. Will operation of the facility in accordance with this proposed change involve a significant reduction in a margin of safety?

   Response: No

   Since allowing barrier impairments in accordance with 10CFR50.59 or declaring affected equipment inoperable is part of the SONGS Units 2 and 3 Licensing Basis, there will be no reduction in the margin of safety from these two criteria.

   Allowing allowed outage times for barrier impairments does not have a significant effect on a margin of safety because the average annual cumulative increase in fuel damage risk is limited to less than 1.0E-6/yr. This small increase is about 3% of the San Onofre Units 2 and 3 core damage risk as reported in the Individual Plant Examination (IPE).

SAFETY AND SIGNIFICANT HAZARDS DETERMINATION:

Based on the above Safety Analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change. Moreover, because this action does not involve a significant hazards consideration, it will also not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.