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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )  
 )  
SOUTHERN CALIFORNIA ) Docket No. 50-206  
EDISON CO. )  
 )  
(San Onofre Nuclear )  
Generating Station Unit 1) )  
\_\_\_\_\_ )

APPLICATION FOR EXEMPTION  
FROM REQUIREMENT TO  
INSTALL EMERGENCY LIGHTING INSIDE CONTAINMENT

Southern California Edison Company ("Applicant"),  
pursuant to 10 C.F.R. §50.12, hereby requests an exemption  
from the requirement, contained in Item III.J. of Appendix R  
to 10 C.F.R. 50, to install battery-powered lighting in all  
areas needed for operation of safe shutdown equipment, to  
permit use of portable emergency lighting equipment inside

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containment at Applicant's San Onofre Nuclear Generating Station, Unit 1 ("SONGS 1"). Such exemption is necessary due to the potential hazards presented by permanently installed batteries inside containment, and the lack of safety benefits from such installation, as described below.

Item III.J. of Appendix R states that:

"Emergency lighting units with at least an 8-hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto."

This requirement is based on the rationale that "there can be a great deal of other activity during the fire emergency and operators involved in safe plant shutdown should not also have to be concerned with lighting in the area." 45 Fed. Reg. 76607. Because Applicant's procedure for safe shutdown describes operator action inside containment, Item III.J. would require installation of 8-hour battery power supplies in the containment.

Any operator convenience gained by installation of battery-powered lighting inside containment, however, is outweighed by the additional safety concerns that such installation would create. In particular, the battery units contain corrosive electrolyte material subject to introduction into the containment environment on rupture. Radiation degradation of the battery enclosure may lead to leakage or rupture over the course of time. The battery units may be subject to explosion when exposed to loss of

coolant accident or major steam line break environments. Also, the battery units emit hydrogen during charging (a normal condition) which has not been accounted for in previous safety evaluations.

Minimal benefits are offered, however, by installation of battery-powered lighting inside containment. Access to containment for safe shutdown is only necessary to address worst case fires. Emergency lighting to permit personnel egress from the affected areas would be unnecessary in that event, since the worst case fires would occur during power operation when the containment is normally unoccupied.

Most of the safe shutdown equipment inside containment required to be accessed following the worst case fires is associated with the residual heat removal ("RHR") system. The worst case fires would lead to a very slow cool down rate due to reduced capabilities and concern over natural circulation cooldown. The time to achieve the primary system temperature for initiation of RHR system cooling would be on the order of 8-10 hours. By the time access to this equipment inside containment would be required, the 8 hour battery supply would most likely be exhausted and portable lights would have to be used in any event. Therefore, installation of battery-powered lighting inside containment would pose safety risks without commensurate benefits.

In addition, the requirement for battery-powered lighting inside containment may be short lived. Safe shutdown approaches are now being considered that would eliminate the need for operator access to equipment inside containment. The installation of battery powered lights may well be rendered unnecessary by future modifications needed to comply with Item III.G. of Appendix R to 10 C.F.R. 50 and requirements resulting from the Systematic Evaluation Program. In the interim, emergency lighting for access to equipment inside containment would be provided as is currently done, by use of administratively controlled portable lights.

As the Commission is aware, extensive fire safety measures have been installed in recent years at SONGS 1. The interim fire safety measures currently in place at SONGS 1 were approved by the Commission in Amendment No. 44 to Provisional Operating License No. DPR-13 for SONGS 1, and were based upon Commission findings, including the following:

- A. 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;
- B. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;

\* \* \*

(Amendment No. 44 at page 1.) Thus, the Commission clearly found that operation of SONGS 1 with interim measures, which included the use of administratively controlled portable lights, would not endanger life or property or the common defense and security.

A specific exemption from the requirement to install battery-powered lighting inside containment is appropriate under 10 C.F.R. §50.12(a), which provides that:

The Commission may, upon application by any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.<sup>1/</sup>

As discussed above, the Commission found in Amendment No. 44 that the measures then implemented at SONGS 1 were sufficient so as not to endanger life or property or the common defense and security. Approximately 80 emergency lighting units have since been installed at locations outside containment, further enhancing fire safety. The requested

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<sup>1/</sup> Three general approaches to exemptions or exceptions from the Commission's regulations have been recognized in the decisions. Washington Public Power Supply System (WPPSS Nuclear Project Nos. 3 and 5), Docket Nos. STN 50-508 and 50-509, CCH Nuclear Regulation Reporter ¶30,170 (April 1, 1977); Kansas Gas & Electric Company, (Wolf Creek Generating Station) Docket No. STN 50-482, CCH Nuclear Regulation Reporter ¶30,132 (January 12, 1977). Direct application to the Commission under §50.12 is particularly appropriate in those circumstances, such as here, where an operating license has already been issued and no Board currently retains jurisdiction over the license. See WPPSS, supra.

exemption is in the public interest since it will avoid the safety hazards presented by batteries inside the containment, without impairing the ability of plant operators to undertake safe plant shutdown.

#### CONCLUSION

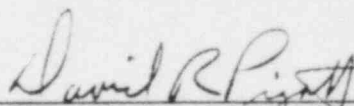
Applicant accordingly requests an exemption from the requirement for installation of battery-powered lighting inside containment at SONGS 1, to permit use of portable lighting for safe shutdown procedures requiring access to containment.<sup>2/</sup>

Dated: December 22, 1981

Respectfully submitted,

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<sup>2/</sup> The applicable schedule for installation of permanent emergency lighting is defined by 10 C.F.R. §50.48(c)(3), which requires completion by startup after the next plant outage meeting certain requirements, but no later than the next refueling outage (second or third quarter, 1983). The next outage which meets the requirements is expected to commence on or before May 1, 1982. Since equipment orders will need to be placed by approximately January 15, 1982 if this exemption request is denied, Applicants would appreciate a prompt response to this request if it is to be granted.