

UNITED STATES OF AMERICA  
 NUCLEAR REGULATORY COMMISSION  
 OFFICE OF NUCLEAR REACTOR REGULATION

Samuel J. Collins, Director

In the Matter of	)	
	)	
SOUTHERN CALIFORNIA EDISON COMPANY	)	Docket Nos. 50-361
	)	and 50-362
(San Onofre Nuclear Generating	)	10 CFR § 2.206
Station, Units 2 and 3	)	

DIRECTOR'S DECISION UNDER 10 CFR § 2.206

I. INTRODUCTION

By Petition dated June 23, 1997, and supplemented by letters of June 28, July 11, and October 21, 1997, Patricia Borchmann (Petitioner) requested that the Nuclear Regulatory Commission (Commission or NRC) take action with regard to San Onofre Nuclear Generating Station (SONGS) Units 2 and 3. The Petitioner requested that the NRC take immediate action to prevent the SONGS units from restarting until all the issues she raised were resolved. In support of the requested action the Petitioner asserted a variety of safety issues concerning the SONGS units. The issues raised included those concerning the emergency evacuation plans for SONGS, the size of the SONGS pressurizers, the condition of the SONGS Unit 1 membrane under the spent fuel pool (SFP) and SFP leak detection monitoring, loss of coolant accident dose calculations, the potential for criticality accidents due to the use of high density storage racks in the SFP, the NRC's failure to comprehensively address issues that have been raised and the withholding of certain data, the production of tritium and the cumulative effects of low level radiation. In its letter dated September 22, 1997, acknowledging the Petition, the NRC informed the Petitioner that there was insufficient basis to

warrant the immediate action requested and that as a result of an evaluation of the issues raised, only two issues would be considered pursuant to 10 CFR 2.206 for preparation of a Director's Decision. The first issue involves whether, when responding to issues regarding SONGS, the NRC has fragmented responses and failed to comprehensively address issues in total and whether issues identified at SONGS when considered as a whole, reveal trends or systemic problems in the operation of the SONGS units. The second issue involves the SONGS analysis of evacuation time in the emergency preparedness plan. The Petitioner stated that the evacuation time estimates and the traffic capacity analysis for SONGS underestimated the actual number of vehicles that would be on the road and were based on the flawed assumption of only one vehicle per household. Further, the Petitioner was concerned that the analysis did not assume lane closures of major roads, which have been observed during natural events in the past.

My Decision in this matter follows.

## II. DISCUSSION

### A. Assessment of Whether SONGS Issues Considered as a Whole Reveal Trends or Systemic Problems.

In the Petitioner's June 28 letter, the Petitioner asserted that NRC responses to another individual's concerns reflected a tendency to fragment issues and isolate responses, and that the NRC failed to comprehensively address the "big picture." In the October 21 letter, the Petitioner asserted that the NRC responses to concerns related to a SONGS Unit 1 SFP plastic membrane further reinforced the Petitioner's concerns related to the NRC fragmenting issues. In the NRC's September 22, 1997, and February 17, 1998, responses to the Petitioner, the NRC indicated that an assessment would be performed to determine if issues considered as a whole reveal trends or systemic problems associated with the safe operation of the SONGS

units. The NRC further informed the Petitioner that it would review the handling of the Unit 1 SFP membrane to determine if issues considered as a whole indicated systemic problems or trends associated with the operation of the SONGS units.

In order to effectively respond to concerns related to SONGS, the staff has maintained documentation of the issues raised and the NRC responses to these issues. To ensure that NRC responses to SONGS Units 1, 2, and 3 issues are consistent and that previously raised issues are taken into consideration, the NRC has designated a manager to serve as the NRC point of contact for responding to these issues.

Furthermore, the process for evaluation and determination of the safety significance of issues raised includes reviewing previously identified issues regarding SONGS. The previously identified concerns and responses are evaluated to determine if they are similar, if they have an impact on the issues under review, if they should be included in the evaluation of the issue under review, and if the response to the issue under review changes previous evaluations.

The staff performed an independent review of the previous SONGS issues together with those noted in the Petition. This review determined that there was no indication of trends or systemic problems affecting the safe operation of the SONGS units or affecting the validity of existing conclusions. Moreover, the staff did not find any evidence that issues had not been fully considered or that relationships with other issues had been ignored. In sum, the staff has concluded that issues identified regarding the SONGS units have been satisfactorily reviewed and that there is no basis for the Petitioner's assertion.

B. Analysis of the SONGS Traffic Capacity Analysis

Title 10 of the Code of Federal Regulations (CFR), Section 50.54(q), states, in part, that “[a] licensee authorized to possess and operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards in §50.47(b) and the requirements in Appendix E of this part.” Part 50 of 10 CFR, Appendix E, Section IV, “Content of Emergency Plans,” states, in part, that “[t]he nuclear power reactor operating applicant shall also provide an analysis of the time required to evacuate and for taking other protective actions for various sectors and distances within the plume exposure pathway EPZ [emergency planning zone] for transient and permanent populations.” Guidance on developing an evacuation time estimate (ETE) study is given in Appendix 4 of NUREG-0654/FEMA-REP-1, Rev. 1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.” The analysis of the time required to evacuate the transient and permanent population from various areas within the plume exposure pathway EPZ at San Onofre is set forth in Appendix G of the SONGS Emergency Plan. The ETEs in the San Onofre Emergency Plan are also reflected in the emergency plans for the offsite jurisdictions located in the plume exposure pathway EPZ for San Onofre, which is about 10 miles in radius.

As indicated in the September 22, 1997, response to the Petitioner, the NRC requires nuclear power plant licensees to study the population distribution relative to the transportation network in the vicinity of a nuclear power plant and to develop ETEs on the basis of the results of the study. However, NRC regulations do not specify any preset minimum evacuation time that must be met in order for a site to be acceptable or for emergency plans to be approved. The objective of an ETE study is to have ETEs that reasonably reflect the evacuation times for the various sectors and distances surrounding a nuclear power plant site for a number of

evacuation scenarios for use by emergency planners and decisionmakers in the emergency planning process. ETEs are used primarily during the planning process to identify potential traffic bottlenecks so that effective traffic control and management measures can be developed. In the event of a serious accident requiring offsite protective actions such as evacuation, plant conditions are the primary indicators used by the NRC and licensee to determine protective actions rather than offsite dose calculations and estimates of evacuation times.

Guidance on protective actions for severe reactor accidents is given in draft Supplement 3 to NUREG-0654, "Criteria for Protective Action Recommendations for Severe Accidents," issued in July 1996. This guidance states that in the event of a severe reactor accident involving actual or projected core damage with potential for offsite consequences, plant operators should recommend prompt evacuation of the area near the plant. In this case, the decision to evacuate is based on plant conditions, including the status of the reactor core and the systems intended to protect the core, and not on the amount of time it may take to evacuate the nearby areas.

The NRC staff took the Petitioner's concerns into consideration during a review of an updated ETE analysis for San Onofre submitted by the licensee on July 25, 1997, in Revision 7 to the SONGS Emergency Plan. The Petitioner asserted that the emergency plans for SONGS underestimated the actual number of vehicles projected to be used during an emergency event, resulting in an overestimated assumption about traffic system capacity. The Petitioner stated that the evacuation and traffic capacity analysis for SONGS was based on the flawed assumption that only one vehicle per household would be used during an evacuation following an emergency event at SONGS. The Petitioner indicated that this was not a realistic assumption and that many more vehicles would be used during an emergency evacuation because parents working at separate locations would need more than one vehicle to evacuate

with children attending different schools or day care centers or engaged in other activities.

Although the use of one vehicle per household is often assumed in ETE studies, the NRC found, based on a review of the ETE study in Revision 7 to the SONGS Emergency Plan (Section 3.4, pages 12-13), that the San Onofre ETE analysis assumes a higher number of vehicles. Different numbers of vehicles are used in daytime and nighttime scenarios to reflect different conditions. All the scenarios assume more than one vehicle per household. Based on its review, the NRC concludes that the methodology used to generate the number of evacuating vehicles reasonably reflects the number of potentially evacuating vehicles for an emergency at San Onofre.

The Petitioner asserted that even under worst-case scenario assumptions, such as flooding, the current ETE analysis assumes there would be no lane closures, such as occurred during flooding and mudslides in 1994 in Laguna Beach. On the basis of a review of the ETE analysis in Revision 7 of the SONGS Emergency Plan, the NRC found that the ETE study contains a comprehensive analysis of road closures after earthquakes (Chapter 11, pages 66-80), and that the road closures in the analysis were very severe and provide a very clear understanding of the sensitivity of the ETE analysis to road closures (Section 5.4, page 17). Thus, the NRC concludes that ETEs can be used by emergency planners to aid in decisionmaking for a wide range of adverse conditions, including lane and road closures caused by flooding and mudslides.

The Petitioner expressed a concern for the need for an updated traffic capacity analysis and evacuation time study to evaluate capacity and levels of service on Interstate 5 (I-5) at the Via de la Valle exit at peak hours during summer when both Del Mar Fair and Del Mar Race Track are operating. The Via de la Valle interchange is about 30 miles to the south of San

Onofre. This is well beyond the influence area of the EPZ<sup>1</sup> evacuation traffic. Furthermore, areas to the south of San Onofre generally have lighter evacuation traffic since the population in the EPZ is more concentrated to the north. Thus, the NRC finds that there is no reason that the ETE needs to consider traffic congestion in the Via de la Valle Interchange area on I-5 as it is well beyond the EPZ and outside the EPZ perimeter traffic control area.

Finally, on January 27, 1998, FEMA informed the NRC that on the basis of the results of the full- participation exercise conducted at San Onofre on October 28, 1997, FEMA found that the offsite radiological emergency response plans and preparedness for the State of California and the jurisdictions specific to the San Onofre site can be implemented and provide reasonable assurance that appropriate measures can be taken off site to protect the health and safety of the public in the event of a radiological emergency at San Onofre.

### III. CONCLUSION

The NRC staff has conducted a review of the previous SONGS issues together with the issues raised by the Petitioner and determined that there is no basis for concluding that the NRC has fragmented issues and there is no indication that issues reveal trends or systemic problems with the conduct of reviews of these concerns or operation of the SONGS units. As a

---

<sup>1</sup>Regarding the Petitioner's comment that an evacuation zone limited to only 10 miles is "sorely inadequate," the size of the EPZs for commercial nuclear power plants in the United States is established by NRC regulations, and the NRC has consistently found that a plume exposure EPZ of about 10 miles in radius provides an adequate planning basis for radiological emergency planning. See NUREG-1251, Vol. 1, "Implications of the Accident at Chernobyl for Safety Regulation of Commercial Nuclear Power Plants in the United States," April 1989, and see *Long Island Lighting Company* (Shoreham Nuclear Power Station, Unit 1), CLI-87-12, 26 NRC 383, 395 (1987) where the Commission ruled that 10 CFR 50.47(c)(2) precludes adjustments on safety grounds to the size of an EPZ that is "about 10 miles in radius."

result, I find that the NRC has evaluated the issues appropriately and find no trends or systemic flaws that would invalidate those reviews.

As discussed above, the NRC staff has evaluated the emergency planning concerns raised by the Petitioner and found that the current emergency plans and preparedness at San Onofre adequately address the Petitioner's concerns. On the basis of FEMA's findings on offsite emergency preparedness and the NRC's findings on the adequacy of onsite emergency preparedness, the NRC continues to find that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the SONGS facility.

For the reasons discussed above, no basis exists for taking the action requested by the Petitioner. Accordingly, the Petitioner's request for action pursuant to 10 CFR 2.206 is denied. A copy of this Decision will be filed with the Secretary of the Commission for the Commission to review in accordance with 10 CFR 2.206 of the Commission's regulations. As provided by this regulation, the Decision will constitute the final action of the Commission 25 days after issuance, unless the Commission, on its own motion, institutes a review of the Decision within that time.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By

Samuel J. Collins, Director  
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,  
this 5th day of June 1998