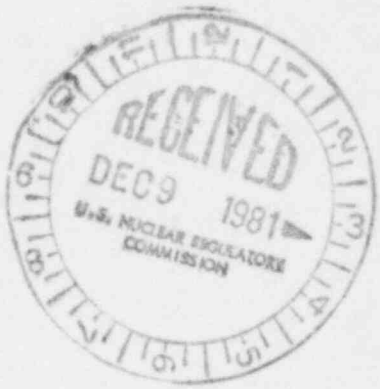
December 9, 1981



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In the Matter of
SOUTHERN CALIFORNIA EDISON COMPANY, ET AL.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL and 50-362 OL

Dear Mr. Perry:

Enclosed please find a copy of the NRC Staff's Proposed Findings Of Fact And Conclucions Of Law On The Issue Of Emergency Preparedness In The Form Of A Proposed Initial Decision filed in this proceeding on December 3, 1981.

Sincerely,

Richard K. Hoefling
Counsel for NRC Staff

Enclosure: As stated

cc: Kenneth Nauman, Jr.
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

December 3, 1981

James L. Kelley, Esq., Chairman
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U.S. Nuclear Regulatory Commission
Washington, DC 20555

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Mrs. Elizabeth B. Johnson
Administrative Judge
Oak Ridge National Laboratory
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In the Matter of
Southern California Edison Company, et al.
(San Onofre Nuclear Generating Station, Units 2 and 3)
Docket Nos. 50-361 OL, 50-362 OL

Dear Members of the Board:

Enclosed are the NRC Staff's Proposed Findings of Fact and Conclusions of Law on the Issue of Emergency Preparedness in the Form of a Proposed Initial Decision. These Findings do not address the updated FEMA findings served on the Board and parties under cover of motion dated December 2, 1981, in light of the Board's October 6, 1981 Order respecting receipt of this document and providing an opportunity to all parties to move, within ten days of receipt of the FEMA findings, to reopen the record. In view of this, the Staff reserves the right to file such supplemental findings regarding the updated FEMA findings as may be appropriate depending on the Board's ultimate disposition of this document.

Sincerely,

Lawrence J. Chandler
Deputy Assistant Chief
Hearing Counsel

Enclosure
As Stated

cc w/encl: See Attached Certificate
of Service

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
SOUTHERN CALIFORNIA EDISON COMPANY, ET AL.	)	Docket Nos. 50-361 OL 50-362 OL
	)	
(San Onofre Nuclear Generating Station, Units 2 and 3)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW ON THE ISSUE OF EMERGENCY PREPAREDNESS IN THE FORM OF A PROPOSED INITIAL DECISION" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk through deposit in the Nuclear Regulatory Commission's internal mail system, this 3rd day of December, 1981:

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Washington, D.C. 20555

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Lawrence J. Chandler
Deputy Assistant Chief Hearing Counsel

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
SOUTHERN CALIFORNIA EDISON COMPANY, ET AL.	)	Docket Nos. 50-361 OL 50-362 OL
	)	
(San Onofre Nuclear Generating Station, Units 2 and 3)	)	

NRC STAFF'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW ON THE ISSUE OF EMERGENCY PREPAREDNESS IN THE FORM OF A PROPOSED INITIAL DECISION

Lawrence J. Chandler
Deputy Assistant Chief Hearing Counsel

Donald F. Hassell
Counsel for NRC Staff

Dated: December 3, 1981

NRS 12-9-81

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NRC STAFF'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW ON THE ISSUE OF EMERGENCY PREPAREDNESS

I. BACKGROUND

1. The history of this proceeding as well as the specific development of the geology/seismology contentions and their resolution is fully recounted in this Board's Partial Initial Decision with respect to the Applicants' Low Power Motion and will not be repeated here. With respect to the specific development of the emergency preparedness contentions, the Board's Partial Initial Decision on the Low Power Motion related the events in the development of those contentions through the prehearing conference which was held on April 29, 1981. That conference was a final prehearing conference pursuant to 10 C.F.R. § 2.752 with respect to the geology/seismology issues. For purposes of emergency preparedness, the conference was held pursuant to 10 C.F.R. § 2.751a to discuss the status of discovery and other procedural matters.

2. Following the April 29, 1981 prehearing conference, further refinement of the emergency preparedness contentions, specifically Contention 4 of Carstens, et al., and Contentions 1 and 2 of GUARD, took place.

3. To assist in this refinement process, an informal discovery session was held at the direction of the Board on June 15, 1981, in Irvine, California. Both Intervenor groups were represented as were the Applicants, the NRC Staff, and the Federal Emergency Management Agency (FEMA). The Board Chairman also appeared to assist in the resolution of any conflicts.

4. At this session, Intervenors were permitted to informally question the representatives of FEMA and the NRC Staff on a wide variety of topics related to the FEMA and NRC Staff review of emergency

preparedness for the San Onofre Nuclear Generating Station, Units 2 and 3 (SONGS 2 and 3).

5. In addition, the Board directed the parties to file briefs dealing with two issues of a substantial legal nature. The first issue involved the interpretation of the Commission's regulations dealing with the size of the plume exposure pathway Emergency Planning Zone (EPZ). This issue arose in the context of contention refinement.

6. The second issue was raised sua sponte by the Board and dealt with consideration of earthquakes in excess of the Safe Shutdown Earthquake (SSE) in the emergency planning area.

7. A final prehearing conference on the emergency preparedness issues was held in San Diego, California, on June 18, 1981, pursuant to 10 C.F.R. § 2.752. All parties were represented by counsel as was FEMA. Further contention refinement was conducted at this prehearing conference and Applicants' motion to consolidate Intervenors GUARD and Carstens, et al. was considered by the Board. As contention refinement was not completed on that day and as the Board was awaiting briefs from the parties with respect to the legal issues described above (See Findings 5-6 above), the Board recessed the final prehearing conference to be reconvened during the hearing on geology/seismology issues if needed. (Tr. 673)

8. On July 1, 1981, during the geology/seismology hearing, the Board reviewed the papers it had before it with respect to emergency preparedness and the status of contention refinement. (Tr. 2581-2601) Stipulations with respect to various contentions proposed by GUARD were also distributed by Applicants. (Tr. 2788-2791)

9. On July 10, 1981, the Board issued a final prehearing conference order on the record with respect to emergency preparedness issues. At that time, the Board admitted final emergency planning contentions, set dates for the commencement of the hearing and the filing of testimony, directed Intervenors GUARD and Carstens, et al., to determine among themselves which Intervenor would act as lead intervenor for each admitted contention and granted Intervenor Carstens, et al., additional time to further refine a contention dealing with the plume exposure pathway EPZ. (Tr. 3491-3515; 3562-3584) Intervenor GUARD did not attend this hearing session but was provided with a copy of the transcript of the proceedings. (Tr. 3563)

10. On July 29, 1981, the Board was informed that the parties had agreed to some minor wording changes with respect to the contentions previously admitted by the Board. (Tr. 5543-5545)

11. As a result of this final refinement, Contentions 1 and 2, as litigated in this proceeding, are as follows:

CONTENTION 1

Whether the state of emergency preparedness for SONGS 2 and 3 provides reasonable assurance that the offsite transient and permanent population within the plume exposure pathway Emergency Planning Zone, 10 C.F.R. § 50.47(c)(2), for SONGS 2 and 3 can be evacuated or otherwise adequately protected in the event of a radiological emergency with offsite consequences occurring at SONGS 2 and 3, as required by 10 C.F.R. § 50.47(a)(1), § 50.47(b)(10), and Part 50, Appendix E.IV.

CONTENTION 2

Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:

A. the procedures for notification by Applicants of State and local response organizations, 10 C.F.R. § 50.47(b)(5), and for notification of and continued communication among emergency personnel by all involved organizations, 10 C.F.R. § 50.47(b)(6);

B. the means for notification and instruction to the populace within the plume exposure pathway Emergency Planning Zone, 10 C.F.R. § 50.47(b) (5);

C. the information and the procedures for dissemination of the information to the public within the plume exposure pathway Emergency Planning Zone on a periodic basis on how they will be notified and what their actions should be in the event of an emergency, 10 C.F.R. § 50.47(b)(7);

D. the arrangements for medical services for contaminated and injured individuals, 10 C.F.R. § 50.47(b)(12);

E. necessary transportation and communication equipment, and the operation of the emergency operations centers of the principal response organizations, 10 C.F.R. § 50.47(b)(8);

F. the capability of each principal response organization to respond and to augment this initial response on a continuous basis, 10 C.F.R. § 50.47(b)(1);

G. radiological emergency response training to those who may be called on to assist in an emergency, 10 C.F.R. § 50.47(b)(15);

H. the methods, staffing, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the plume exposure pathway EPZ for SONGS 2 and 3, 10 C.F.R. § 50.47(b)(9);

I. the physical design, communications equipment, and operating procedures for the interim Emergency Operations Facility, 10 C.F.R. § 50.47(b)(3) and § 50.47(b)(8);

J. the methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the ingestion pathway EPZ for SONGS 2 and 3, 10 C.F.R. § 50.47(b)(9); and

K. general plans for recovery and reentry, 10 C.F.R. § 50.47(b)(13).

12. On July 30, 1981, Applicants, NRC Staff and GUARD entered into a stipulation subsequently approved by Board Order dated August 21, 1981, governing the schedule for filing of testimony and the order of presentation of witnesses.

13. On August 4, 1981, after receiving a reframed contention from Carstens, et al. with respect to the plume exposure pathway EPZ, the Board admitted this refined contention with some modifications. (Tr. 6802-06) The contention, as admitted, reads as follows:

CONTENTION 3

The emergency response plans fail to meet the requirements of 10 C.F.R. § 50.47(c)(2) because local emergency planning officials have arbitrarily established the boundaries of the Plume Exposure EPZ in that they have mechanically applied a 10 mile boundary and that the Interagency Agreement (IAEP) among all local jurisdictions defines the EPZ by drawing compass lines on a map of the area. In determining the exact size of the EPZ, emergency planning officials have failed to consider the following local conditions:

1. topography
2. meteorology
3. evacuation routes
4. demography
5. jurisdictional boundaries
6. SAI report
7. land characteristics

14. On July 29, 1981, the Board, after consideration of the parties' views with respect to the propriety of an emergency preparedness issue dealing with earthquakes in excess of the SSE (See NRC Staff Views with Respect to Questions Posed by the Atomic Safety and Licensing Board in the Area of Emergency Planning dated June 22, 1981; Applicants' Memorandum of Law Opposing Any Exercise of ASLB Sua Sponte Authority Which Would Go Beyond Governing Commission Regulations and Require

Consideration of an Earthquake that Exceeds the SSE For Emergency Planning Purposes dated June 22, 1981; Intervenor GUARD's Comments Concerning the Issue of Applicants' Obligation To Consider An Earthquake More Severe than the Safe Shutdown Earthquake In Re Emergency Planning dated June 23, 1981; and Intervenors Carstens, et al. Position Regarding Consideration of A Major Earthquake In Emergency Planning At SONGS 2 and 3 dated June 22, 1981), by Order raised the issue on its own motion. (Tr. 5546-47)

15. Upon receipt of the parties' comments to the Board's Order of July 29, 1981, on August 7, 1981, the Board issued an Order modifying the earthquake issue in various minor respects.

16. On August 17, 1981, the Applicants by their Request For Certification To the Nuclear Regulatory Commission requested the Board to certify the appropriateness of the earthquake issue to the Commission. The NRC Staff supported this request. (See NRC Staff's Response To Applicants' Request For Certification to the Nuclear Regulatory Commission dated August 31, 1981)

17. On September 14, 1981, the Board referred the issue to the Atomic Safety and Licensing Appeal Board. By Order dated September 18, 1981, the Commission on its own motion directed that no further consideration be given to this issue by the Licensing Board or Appeal Board until further order of the Commission, and directed this Board to submit to the Commission its rationale for proposing the issue and the criteria the Board would apply for resolution of the issue. The Board made its submittal on October 2, 1981.

18. On August 20, 1981, Intervenor GUARD filed a motion for continuance of the emergency planning hearing. The motion was opposed by both Applicants and NRC Staff and was denied by the Board on August 26, 1981. (Tr. 7402-06)

19. Two hearing sessions were held on emergency planning issues in Anaheim, California. The first session ran from August 25, 1981 through September 4, 1981. The second session ran from September 21, 1981 to September 30, 1981. Intervenor Carstens, et al., determined that it would not undertake the responsibilities of lead intervenor for any emergency prepareness contentions. Subsequent to that determination by Intervenor Carstens, et al., representation of that group was assumed by Intervenor GUARD. (Tr. 6829) Parties to the emergency preparedness proceedings therefore included Applicants, the NRC Staff and a consolidated intervenor group consisting of GUARD, and Carstens, et al. (Intervenors).

20. At the hearing, both Applicants, Intervenors and the NRC Staff presented testimony on the issues in controversy, including testimony by a FEMA witness, sponsored by the NRC Staff. A number of witnesses for both Applicants and Intervenors were called by subpoena. A substantial number of exhibits were admitted into evidence. The record compiled is outlined in Appendices A and B to this Initial Decision.

21. By its Order of October 6, 1981, this Board closed the record in this proceeding subject to inclusion in the record of the following documents from FEMA:

(a) a letter from FEMA responding to a series of Board questions posed on the record to Counsel for FEMA.

(b) a letter from FEMA dealing with the need for arrangements for medical services for members of the general public who may be injured in a radiological emergency, and

(c) further findings and determination from FEMA with regard to the adequacy of offsite emergency preparedness for SONGS 2 and 3. The Board did not view the inclusion of this item in the record as mandatory. (Tr. 11,373)

22. On October 15, FEMA issued the two letters addressing items (a) and (b) above. By its Order of October 22, 1981, the Board invited the parties to comment on these letters. The NRC Staff and Applicants each commented by letter of November 16, 1981. Counsel for FEMA provided a supplemental letter to the Board dated November 19, 1981. These documents are hereby admitted into the record as Board Exhibits 1 through 5. We note that Applicants' comments dated November 16, 1981 and FEMA's supplemental letter dated November 19, 1981 are in the form of statements of counsel and, although received in evidence, will be accorded due weight.

23. On December 2, 1981, the NRC Staff transmitted to the Board and parties the updated findings evaluation of plans and implementation capabilities of State and local governments for the San Onofre Nuclear Generating Plant dated December 1, 1981 accompanied by its Motion to Supplement the Record. By the Board's Order of October 6, 1981, the other parties were permitted to comment with respect to the FEMA submittal referred to in item (c) above.

II. INTRODUCTION

24. A number of changes in regulation and guidance with respect to emergency planning have materialized over the last several years. As part of the changes which occurred, responsibility for offsite emergency planning around nuclear power plants was transferred from the NRC to FEMA by a presidential directive of December 7, 1979. (45 Fed. Reg. 55406)

25. A Memorandum of Understanding (MOU) between the NRC and FEMA effective January 14, 1980 (45 Fed. Reg. 5847) detailed the responsibilities of FEMA and of the NRC and the cooperative efforts to be undertaken by the two agencies. While the overall responsibility for licensing nuclear power plants remained with the NRC, the MOU specifies that FEMA has lead responsibility for review of state and local emergency plans, while the NRC continues to have lead responsibility for review of Applicants' onsite emergency plans.

26. A subsequent Memorandum of Understanding effective November 4, 1980, built upon the relationship developed between the two agencies and superseded the earlier MOU. FEMA continued to be responsible for evaluating the adequacy of state and local plans and for making findings and determinations in this regard to assist the NRC in its licensing reviews. (45 Fed. Reg. 82713)

27. On August 19, 1980, the NRC published its final rule, effective November 3, 1980, upgrading its emergency planning regulations in order to assure that adequate protective measures can and will be taken in the event of a radiological emergency. (45 Fed. Reg. 55402) In both the Statement of Consideration accompanying the rule and in the rule itself (See 10 C.F.R. § 50.47(b), fn. 1), reference was made to NUREG-0654,

FEMA-REP-1 entitled "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants - For Interim Use and Comment" January 1980. This was a joint NRC/FEMA guidance document to provide licensees with direction in implementing the newly promulgated regulations.

28. This document has since been revised with Revision 1 appearing in November 1980. This revision will henceforth be referred to in this Initial Decision as NUREG-0654.

29. Under the Commission's current regulations, applicants must submit an emergency plan meeting the planning standards of 10 C.F.R. § 50.47(b) and the requirements of Appendix E of Part 50. (See Part 50, Appendix E.I) The Applicants propose to meet this requirement with their Emergency Plan for the San Onofre Nuclear Generating Station, Units 2 & 3, dated April 1981, as supplemented by Revision 2 of the Wilbur Smith and Associates Time Estimate Study. (Applicants' Exhibits 51 and 132)

30. In addition, an application for an operating license requires submittal of the radiological emergency response plans of state and local governmental entities wholly or partially within the plume exposure pathway EPZ as well as the plans of state governments wholly or partially within the ingestion pathway EPZ. (See 10 C.F.R. § 50.33(g)) In the case of SONGS 2 and 3, these entities include the State of California through its Office of Emergency Services (OES), Orange County, San Diego County, the City of San Clemente, the City of San Juan Capistrano, the State Department of Parks and Recreation--Pendleton Coast Office, and the Camp Pendleton Marine Corps Base. Plans for these entities as well as the Interagency Agreement and Evacuation Procedure for the SONGS 2 and 3

Plume Exposure Pathway EPZ dated December 1980 (IREP) are part of the record in this proceeding. (Applicants' Exhibits 52-59)

31. Both the NRC Staff and FEMA have responsibilities under the current Memorandum of Understanding in the review of emergency preparedness associated with a commerical nuclear facility. It is the responsibility of FEMA to take the lead in offsite emergency planning and review and to assess state and local emergency plans for adequacy. It is the responsibility of the NRC, and in the first instance the NRC Staff, to assess apolicants' emergency plans for adequacy and to determine the adequacy of the overall state of emergency preparedness. (See 10 C.F.R. § 50.47(a))

32. The NRC Staff's review is documented in Section 13.3 of the Safety Evaluation Report related to the operation of San Onofre Nuclear Generating Station, Units 2 and 3, NUREG-0712, dated February 6, 1981 (SER) (Staff Exhibit 1); in Section 22 of Supplement No. 1 to the SER dated February 25, 1981 (Staff Exhibit 2); and in Section 13 of Supplement No. 3 to the SER dated September 1981 (Staff Exhibit 12)

33. The FEMA review of offsite State and local plans consisted of a number of steps which commenced with a review of the plans by the Regional Assistance Committee (RAC). The membership and the functions of the RAC are outlined in the FEMA proposed rule for Review and Approval of State and Local Radiological Emergency Plans and Preparedness. (45 Fed. Reg. 42341). (See specifically 44 C.F.R. § 350.6) The RAC review of the San Onofre Offsite Emergency Response Plans dated April 27, 1981, is in evidence in this proceeding. (Intervenors' Exhibit 13)

34. Subsequent to the RAC review, an exercise of the SONGS emergency plans was held which involved the Applicants and State and local emergency response personnel as participants and which was reviewed and critiqued by FEMA. The Evaluation Findings San Onofre Nuclear Generating Station Offsite Emergency Response Plans Exercise, dated May 13, 1981 is in evidence in this proceeding. (Intervenors' Exhibit 14)

35. Based upon the review by the RAC of the plans and the findings of the May 13, 1981 exercise, FEMA, on June 3, 1981, issued its Interim Findings and Determination Relating to the Status of State and Local Emergency Preparedness for San Onofre Nuclear Generating Station (Units 2 and 3) which is in evidence in this proceeding. (Staff Exhibit 11) FEMA there concluded that State and local governmental radiological emergency response plans were minimally adequate but that the offsite capability for implementation for the plans was not considered adequate.

36. Subsequent to the June 3, 1981 interim FEMA findings and determination, a meeting was held between Applicants and FEMA and a program of corrective action was developed with which FEMA concurred and which, if satisfactorily completed, would cure the deficiencies identified by FEMA and result in a favorable FEMA finding. (Applicants' Exhibits 144 and 146)

37. It was anticipated by both Applicants and FEMA that the further findings and determination by FEMA could be forthcoming by November 1, 1981. The hearing on the emergency preparedness issue was concluded on September 30, 1981, without the benefit of the further findings and determination from FEMA. By its Motion to Supplement the Record in this

proceeding, of December 2, 1981, the NRC Staff transmitted to the Board and parties the further FEMA findings. (See Finding 23 above)

38. The Board will now review the record with respect to each of the issues in controversy and make its findings thereon.

III. FINDINGS OF FACT

A. CONTENTION 1

Whether the state of emergency preparedness for SONGS 2 and 3 provides reasonable assurance that the offsite transient and permanent population within the plume exposure pathway Emergency Planning Zone, 10 C.F.R. § 50.47(c)(2), for SONGS 2 and 3 can be evacuated or otherwise adequately protected in the event of a radiological emergency with offsite consequences occurring at SONGS 2 and 3, as required by 10 C.F.R. § 50.47(a)(1), § 50.47(b)(10), and Part 50, Appendix E.IV.

39. The Commission's regulations call for the development of a range of protective actions for the plume exposure pathway EPZ and require that guidelines for the choice of protective actions during an emergency be developed and in place. (See 10 C.F.R. § 50.47(b)(10)) Appendix E.IV to Part 50 calls for an analysis of the time required to take various protective actions.

40. The Staff presented testimony with respect to Contention 1. Mr. John R. Sears explained the role of time estimates for evacuation and for taking other protective actions which are required to be submitted pursuant to Part 50, Appendix E.IV. The time estimates serve two principal purposes. First, they are used to identify transportation routes, areas or facilities in the vicinity of the site for which special traffic controls during an emergency or other special plans would be desirable. Second, they provide to the decision-makers during an

emergency, knowledge of the length of time required to effect protective action under various conditions. This knowledge allows an informed choice of protective actions during an actual accident situation. (Sears Testimony of August 20, 1981, p. 3)

41. Time estimates have been submitted by the Applicants for the protective action of evacuation. (Applicants' Exhibits 51 and 132) The time estimates were examined by the NRC Staff and were found to be acceptable. Time estimates for evacuation are considered acceptable if the criteria of NUREG-0654, specifically II.J and Appendix 4, are satisfied. Both the NRC Staff and its contractor, the Texas Transportation Institute of the Texas A&M University System, reviewed both Revisions 1 and 2 of the Wilbur Smith and Associates Times Estimates Study. The latest revision received an excellent rating in all respects. (Sears Testimony of August 20, 1981, pp. 4-5; Sears, Tr. 11,027)

42. The other protective action in addition to evacuation that may be taken in the event of an emergency is sheltering; the time necessary to take shelter is principally a function of the time for notification. To assure timely notification, Applicants are installing and testing a siren system for early alerting of the public and have an ongoing public educational program. (Sears Testimony of August 20, 1981, p. 4)

43. In addition, the Staff has evaluated the capability of the Applicants to evaluate the need for and to make recommendations to offsite response agencies with respect to evacuation or other protective measures. The criteria of NUREG-0654, specifically II.J, were examined. The Staff examined not only the Applicants' Emergency Plan (Applicants' Exhibit 51) but also implementing procedures dealing with emergency

recognition and classification, notification and recommendations for offsite protective measures. The notification procedure states that notification shall be made to all offsite authorities by the on-duty shift personnel immediately following the declaration of the emergency. The procedure includes message forms, with the recommended protective action, for each type of emergency. The procedures provide specific guidance to the Emergency Coordinator for recommending offsite protective actions to local emergency response authorities. The Staff concluded that the Applicants' emergency implementation procedures demonstrate the capability to evaluate the need for and to make recommendations with respect to protective actions to offsite response agencies and therefore satisfy the NUREG-0654 criteria. (Sears Testimony of August 20, 1981, pp. 6-8)

44. Mr. Kenneth Nauman of FEMA provided testimony relevant to Contention 1 dealing with offsite emergency preparedness. Mr. Nauman's assessment concluded that jurisdictions have considered evacuation time estimates developed by Wilbur W. Smith and Associates (Applicants' Exhibit 51) pertaining to protective responses in an emergency situation. (Nauman Testimony of August 24, 1981, pp. 2-3) Mr. Nauman concurred with the NRC Staff that the time estimates developed by Wilbur Smith and Associates met the criteria of NUREG-0654. (Id.; Nauman, Tr. 10,885)

45. Mr. Nauman also examined the capability of offsite organizations to evacuate or take other protective measures for the offsite permanent and transient population within the plume exposure pathway EPZ. He concluded that additional work was needed to meet NUREG-0654 criteria. Also, while there was a demonstrated ability to

respond to general disaster conditions, additional training in the radiological response area was needed. Nonetheless, Mr. Nauman concluded that 10 C.F.R. § 50.47(b)(10) was met except to the extent that further development of protective action procedures for the ingestion pathway EPZ had yet to be completed. (Nauman Testimony of August 24, 1981, pp. 3-5; Nauman, Tr. 10,891-894)

46. Mr. Nauman concluded that the latest Wilbur Smith Time Estimate Study needs to be factored into each jurisdiction's plans as well as the IAEP. (Nauman, Tr. 10,886-888)

47. Applicants also presented testimony on this issue. Mr. K. P. Barr, Manager, Health Physics for SONGS, described his activities during an emergency. During an emergency, Mr. Barr is responsible for appointing and directing Southern California Edison personnel in onsite and offsite radiological monitoring activities, performing dose projections for onsite and offsite areas, providing health physics support for onsite emergency activities, providing technical advice to the Emergency Coordinator on radiological aspects of both onsite and offsite activities, coordinating offsite monitoring activities with State and local agencies, ensuring issuance and proper use of radiological protective equipment and assigning a Health Physics engineer to the Emergency Operations Facility (EOF). Mr. Barr further described the onsite capability for assessing the radiological significance of any accidental offsite release of radioactivity from SONGS 2 and 3 and for formulating recommended protective actions for the affected offsite transient and permanent populations. Mr. Barr stated that the primary method of calculating potential or actual offsite

consequences of releases of radioactivity to the atmosphere is an analytical projection based on readouts from installed monitoring devices. Individuals trained to perform offsite dose calculations will be onsite at all times. Radiological monitoring teams are available for immediate response. The projected dose rates are provided to the Technical Support Center (TSC) and the Offsite Dose Assessment Center (ODAC) and are compared to the Protective Actions Guides (PAGs) set out in the Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA-520/1-75-001), September, 1975, published by the Environmental Protection Agency. Mr. Barr stated that recommendations are then made to the Emergency Coordinator based upon the results of this comparison. (Barr Testimony, pp. 4-18)

48. Mr. E. L. Murri, an NUS consultant, testified on behalf of Applicants. He discussed the general concept of evacuation planning and distinguished spontaneous from directed evacuation. Spontaneous evacuation occurs when people perceive themselves as threatened and leave the area before they are told to do so. Directed evacuation is an evacuation of an area after the responsible public official has ordered such an evacuation. Mr. Murri concluded that a spontaneous evacuation naturally improves a directed evacuation because it lowers the number of people who must be mobilized and evacuated in the directed evacuation. Mr. Murri discussed experience in conducting large-scale evacuations and concluded that no instance has been identified where evacuation has caused panic, increased traffic accidents, or anti-social behavior. People are generally very alert, more cautious, and committed to accomplishing a smooth evacuation. (Murri Testimony, pp. 25-29)

Mr. Murri also testified as to other protective actions, specifically sheltering and thyroid prophylaxis, available in the event of a radiological emergency with actual or potential offsite consequences and when such actions would be appropriate. (Murri, pp, 29-33)

49. Mr. Murri discussed the chronology and rationale for the revision of offsite radiological emergency response plans for SONGS 2 and 3 to comply with NRC regulations. (Id.) Mr. Murri also provided a general perspective on the factors that he considered in assessing the capability of the involved offsite organizations to effectively respond to a radiological emergency. (Id.)

50. Mr. B. T. Brothers of Wilbur Smith and Associates presented testimony dealing with evacuation plans and time estimates for SONGS 2 and 3. Wilbur Smith and Associates performed both the time estimate study contained in Applicants' Exhibit 51 and Revision 2 to that time estimate study. (Applicants' Exhibit 132)

51. Mr. Brothers testifed that the evacuation planning in the local radiological emergency response plans is coordinated through the IAEP. (Applicants' Exhibit 52) Mr. Brothers further described the steps taken by Wilbur Smith and Associates to develop the time estimates, i.e., the population characteristics considered, the special populations which were considered and how they were quantified, how evacuation planning subsectors were determined, how evacuation routes were selected and the availability of alternate evacuation routes should primary routes become impaired. (Brothers Testimony, pp. 11-56) Mr. Brothers described the consideration given to abnormal roadway conditions, the availability of reception and care centers, the availability of public transportation or

ambulances for persons who do not have access or cannot use a private automobile, and alternative protective actions that might be recommended in the event of a radiological emergency at SONGS 2 and 3. (Id.)

52. Mr. Brothers testifed that the time estimate studies conform to the Commission's regulations, specifically, 10 C.F.R. § 50.47 and Appendix E to Part 50, and also to the guidance set forth in NUREG-0654. (Brothers Testimony, p. 10)

53. On that basis, Mr. Brothers further concluded that there was reasonable assurance that the transient and permanent population within the plume exposure pathway EPZ could be evacuated, even given peak population, abnormal weather, and adverse roadway conditions. (Id.)

54. Intervenors also presented direct written testimony with respect to the feasibility of taking protective actions. Dr. Sheldon C. Plotkin, President of Sheldon C. Plotkin & Associates, a Los Angeles consulting engineering firm, testified that he perceived certain defects in the time estimate studies peformed by Wilbur Smith and Associates. (Plotkin Testimony, pp. 3-4) The Board would note that a substantial portion of the testimony of Dr. Plotkin was ruled inadmissible as being beyond the scope of issues before the Board in this proceeding and thus irrelevant. The NRC Staff raised this objection and specifically delineated those portions of the written testimony it considered objectionable. The Board substained the Staff's objection in major part. Specifically, those portions of Dr. Plotkin's testimony dealing with cancer deaths were determined by the Board to be beyond any issue in controversy. (Tr. 9532-37)

55. Dr. Plotkin attempted to critique the Wilbur Smith and Associates study and to challenge certain assumptions used therein. (Plotkin Testimony, pp. 7-8; Intervenors' Exhibit 7) Dr. Plotkin claimed that overly optimistic evacuation conditions had been used in the study. Spontaneous evacuation was allegedly not considered nor did travel time include on-ramp queuing. Dr. Plotkin also claimed that proper consideration of traffic accidents would considerably lengthen the evacuation times of the Wilbur Smith studies. (Plotkin, Tr. 9453-60)

56. Applicants presented rebuttal testimony of Mr. Brothers dealing with the allegations made by Dr. Plotkin. (Tr. 11,065, et. seq.) Mr. Brothers, as previously noted, was the principal author of the Wilbur Smith and Associates time estimate studies. Mr. Brothers pointed out that Dr. Plotkins' testimony contained incorrect assertions in that overly optimistic conditions were not used in the studies. Indeed a number of conservative assumptions were applied such as no lead time following an incident for preparation on the part of agencies or the public to react, no preceding, voluntary evacuation before a directed evacuation is initiated, all residents present in the area to be evacuated, maximum use of the beaches and reasonable roadway capacities. (Brothers, Tr. 11,069-082)

57. Mr. Brothers explained the roadway capacities he used and their basis. Bottlenecks and stop-and-go traffic were accounted for. Mr. Brothers then explained how Dr. Plotkin incorrectly applied capacity data in reaching his time estimates. Dr. Plotkin assumed essentially a fully loaded freeway for the entire evacuation period which was

incorrect; the freeway would be fully loaded during only one half of the time required to evacuate. (Id.)

58. Also, Dr. Plotkin assumed that two lanes would be blocked for the entire evacuation period. Even if an accident occurred at a bottleneck, shoulders would be available for vehicles to travel on or for disabled vehicles to be pushed onto. Further, it would be possible to switch cars onto southbound lanes to go north. Mr. Brothers also refuted Dr. Plotkins' accident data and stated that realistic accident numbers and consequences were taken into account in his work. (Id.)

59. The Board gives little weight to the testimony of Dr. Plotkin in reaching its determinations on this issue. Dr. Plotkin has no expertise acquired by education and only minimal and partially relevant experience in the subject area of his testimony. The Applicants' witness, Mr. Brothers, on the other hand, has extensive experience in this field. We thus find that his testimony refutes the assertions made by Dr. Plotkin. Moreover, we note that Applicants' time estimates were confirmed by the testimony of Mr. Sears of the NRC Staff, Mr. Nauman of FEMA, and the Staff's contractor, the Texas Transportation Institute of the Texas A&M University System, referred to in the testimony of Mr. Sears.

60. A number of witnesses were subpoenaed by Applicants and provided testimony relevant to Contention 1. B. Killingsworth, Commander of the Border Division of the California Highway Patrol (CHP), described the responsibilities and capabilities of that entity in responding to a radiological emergency. (Tr. 8265, et. seq.) Chief Killingsworth testified that the highway patrol had participated in the development of

evacuation plans and routes with Wilbur Smith and Associates and approved the routes and traffic control locations. Standard Operating Procedures (SOPs) for evacuation were being finalized. Chief Killingsworth described the communications system available to the CHP and stated that its principal role in an emergency would be traffic control. Finally, Chief Killingsworth described CHP procedures for activation of its Emergency Operations Center (EOC) and notification of personnel. CHP personnel are sent to other EOCs as they are set up. Chief Killingsworth concluded that he had sufficient personnel and equipment to perform the role assigned to CHP in the event of a radiological emergency at SONGS 2 and 3. (Id.)

61. D. H. Roper, Deputy Director in charge of operations in the Los Angeles District of the California Department of Transportation (CALTRANS) testifed as to that agency's duties and responsibilities during a radiological emergency. (Tr. 8328, et. seq.) Mr. Roper testified that CALTRANS was involved with Wilbur Smith and Associates in the development of evacuation routes to be used in the event of an emergency at SONGS 2 and 3 and the final routes and traffic control points were acceptable to CALTRANS. CALTRANS' role in an emergency would be to assist in traffic control and to provide its expertise to facilitate evacuation. To this end, Mr. Roper described the CALTRANS EOC, available communications, capability to augment Staff and the efforts at finalizing SOPs governing its operations. In the opinion of Mr. Roper, CALTRANS had sufficient equipment and personnel to carry out its operations. (Id.)

62. Mr. C. Nash, Director of Disaster Services and Assistant Executive Director of the Orange County Chapter of the Red Cross, described the role of that agency in a radiological emergency at SONGS 2 and 3. (Tr. 8418, et. seq.) Mr. Nash testified that the Red Cross has extensive experience in emergency response and will be prepared to open and staff reception and care centers once a decision is made requiring their need. At these centers, people in need would be met by experienced Red Cross personnel and by nursing personnel stationed within those facilities. Mr. Nash described the communications available to the Red Cross which includes radio, telephones and personnel pagers. The Red Cross has ten radio-equipped vehicles, and numerous volunteer vehicles are radio-equipped as well. Mr. Nash described the notification procedures whereby the Red Cross would be notified of an incident and whereby it would initiate its activities. Finally, Mr. Nash described the training given to Red Cross personnel to assure that reception and care centers will be properly set up and operated. (Id.)

63. Mr. J. P. Stowe, Area Manager of the Pendleton Coast area of the State Department of Parks and Recreation, testified as to the capability of that organization to take protective actions in the event of a radiological emergency at SONGS 2 and 3. (Tr. 8486, et. seq.) Mr. Stowe testified that he has had experience with evacuations in the past which were successful and that his organization had suitable arrangements for notification and communication to implement protective actions called for in an emergency. Specifically, Mr. Stowe described the procedures for initial notification of an emergency at SONGS 2 and 3. Backup procedures include a direct telephone line to State Park

personnel. Radio capability is also available. Mr. Stowe has access to jeeps and a 30-foot rescue boat, all of which have public address equipment. Mr. Stowe recounted his efforts in developing the posters and flyers to be mounted in the State Park area and distributed to visitors which inform the public of actions to be taken in an emergency. Mr. Stowe described the siren notification system and its activation procedures, the procedures for personnel call-up and EOC activation and the actions to be taken to clear the beach, should that be necessary. Mr. Stowe concluded he had sufficient personnel and equipment to carry out his emergency duties including evacuation of the beach area if that was required. (Id.)

64. Mr. R. J. Coleman, Director of Fire Protection for the City of San Clemente and, as a collateral duty, Deputy Director of Emergency Services, testified as to his general duties and responsibilities in a radiological emergency. (Tr. 8564, et. seq.) Mr. Coleman testified as to his past experience in San Clemente dealing with emergencies. During that period, a partial evacuation was conducted. Mr. Coleman described the training activities in San Clemente, the communications capability of the City of San Clemente, and the capability of the City to be notified and respond in the event of a radiological emergency at SONGS 2 and 3. Mr. Coleman further testified that the City had met with Wilbur Smith and Associates to evaluate aspects of the time estimate studies performed by that organization. Mr. Coleman described the transportation equipment available to the City of San Clemente for an emergency response. (Id.) Mr. Coleman recounted the efforts of the City of San Clemente toward interjurisdictional cooperation. Mr. Coleman presently chairs the

Interjurisdictional Planning Committee (IJPC). Finally, Mr. Coleman described the decision-making process in San Clemente for making a determination as to what protective action should be taken in an emergency. Mr. Coleman also described the City's radiological monitoring capability. (Id.)

65. C. S. Ferguson, Administrative Assistant to the Director of Public Works of the City of San Juan Capistrano, testified concerning the responsibilities and capabilities of that organization to respond in a radiological emergency. (Tr. 8683, et. seq.) The City of San Juan Capistrano contracts for fire and sheriff services with the County of Orange. Ms. Ferguson described the radiological emergency response plan adopted by the City of San Juan Capistrano and outlined the notification procedures for contacting emergency personnel. Ms. Ferguson also stated that the IJPC serves to coordinate and consolidate all emergency planning efforts of entities involved in responding to a radiological emergency at SONGS 2 and 3. (Id.)

66. J. M. Swanson, Safety/Energy Coordinator for the Capistrano Unified School District, presented testimony with respect to the steps taken by the school district to respond in the event of a radiological emergency at SONGS 2 and 3. (Tr. 8789, et. seq.) Ms. Swanson testified with respect to notification procedures in the event of a nuclear disaster, the emergency procedures which have been developed by each school and the steps which would be taken for the coordination of transportation for evacuating students. (Id.) Ms. Swanson further testified as to the school district's past experience with evacuation and the annual program of emergency drills conducted by the school district.

Finally, Ms. Swanson indicated that the Capistrano Unified School District has a standing operating policy regarding a radiological emergency at SONGS 2 and 3 and an emergency guide providing each school principal and administrator with a description of the actions called for in case of an emergency. (Applicants' Exhibits 139 and 140) Finally, Ms. Swanson described the transportation capability of the school district and related the arrangement the school district has with Orange County for additional buses to support an evacuation should such buses be needed. (Id.)

67. Mr. E. S. Turner, Manager of the Emergency Management Division, General Services Agency, for the County of Orange, testified as to the capabilities of that county to respond to a radiological emergency. (Tr. 8899, et. seq.) Mr. Turner related the involvement of his agency in the development of response plans for SONGS 2 and 3. Mr. Turner also related the involvement of Orange County in the development of evacuation planning including recommended route selections, and recommendations for relocation and care centers. Mr. Turner described the Orange County EOC including its communications and logistics support capabilities. The county's procedures for notification of an emergency at SONGS 2 and 3, notification of appropriate Orange County personnel in the event of such an emergency, and notification of the public through use of sirens were discussed. Mr. Turner also referred to the IJPC and its efforts to ensure full coordination among the members of the group before any activation of sirens. Coordination in this regard would be assisted by the yellow phone system which permits ready discussion among a number of responding organizations including all of the principal response

organizations. Mr. Turner further related the role of Orange County in radiological monitoring and dose assessment. The Orange County Health Officer participates in the ODAC located in the interim EOF at the San Clemente City Hall. The county has available twelve radiation monitoring teams which have had radiological monitoring training. (Id.)

68. J. W. Hunt, Director of the Office of Disaster Preparedness for the County of San Diego, testified with respect to the capabilities and responsibilites of that county in the event of a radiological emergency at SONGS 2 and 3. (Tr. 9252, et. seq.) In the event of an emergency, Mr. Hunt's organization would activate the county EOC and notify and coordinate with all response agencies in the County of San Diego including not only county departments but other agencies needed to respond to any kind of disaster. This would include coordination with the United States Marine Corps at Camp Pendleton and all military facilities in the San Diego area including the United States Coast Guard. (Id.) Mr. Hunt referred to the IAEP and indicated that the document serves as a coordinating document among all agencies including the County of San Diego for purposes of evacuation and coordination among the various entities. Mr. Hunt detailed the notification procedures following notification to the county of an incident at SONGS 2 and 3 and described the communications and transportation capabilites of the county. Finally, Mr. Hunt described the range of protective actions which would be available to San Diego County in the event of a radiological emergency at SONGS 2 and 3 with offsite consequences and described how the decision would be reached by the county. (Id.)

69. Lt. Col. J. E. Wallace, Operations/Plans/Budget Officer in the Office of the Assistant Chief of Staff, Operations and Training, Marine Corps Base, Camp Pendleton, California, provided testimony with respect to the response functions and capabilities of the Marine Corps in the event of a radiological emergency at SONGS 2 and 3. (Tr. 9315, et. seq.) Col. Wallace related the experience of the Marine Corps in dealing with emergencies including evacuation and movement of people. Col. Wallace discussed the evacuation planning in place and indicated that primary and secondary evacuation routes have been selected. In any event, the Marines have the capability of walking overland in Camp Pendleton itself should this be required. In the judgement of Col. Wallace, the Marine Corps could evacuate that portion of the plume exposure pathway EPZ within Camp Pendleton, including military equipment, within a period of approximately two hours. (Id.) Col. Wallace described the Marine Corps' EOC, the system to activate sirens, the Corps' procedure for notification of personnel to man the EOC, and the communications and transportation capabilities available to assist in responding to a radiological emergency. The Corps' capabilities in the areas of radiological monitoring, including helicopter capability, were discussed. (Id.)

70. Intervenors subpoenaed additional witnesses who testified on this issue. Ms. M. Ditty, Executive Director of the San Clemente Seniors Inc., testified with respect to the special population known as the frail-at-risk elderly. (Tr. 9832, et. seq.)

71. Ms. Ditty delineated problems associated with this special population such as difficulties regarding access to transportation, difficulty in hearing sirens, isolated populations that might not receive

notification of an emergency by the broadcast media, forgetfulness of information brought on by senile dementia and a reluctance to venture out for fear of their safety. Ms. Ditty also testified as to the special needs of elderly populations at relocation and care centers. (Id.)

72. J. Goodwin, General Chairman of the United Transportation Union, Local 19, testified with respect to the response of bus drivers of the Orange County Transit District (OCTD) in the event of a radiological emergency at SONGS 2 and 3. (Tr. 9883, et. seq.) Ms. Goodwin testified that she was unaware of any specific plans at OCTD for response regarding a radiological emergency at SONGS 2 and 3. Furthermore, Ms. Goodwin was unaware of any provision in the bus drivers' contracts which sets forth a responsibility on their part in any type of emergency. Ms. Goodwin recounted difficulties drivers might have in responding to an emergency, such as unawareness of the service area, especially particular streets and routes, difficulty with initial disposition of passengers, absence of training programs, difficulty in dispatching buses in the late evening, and difficulties in communication. (Id.)

73. Dr. R. Ehling, Assistant Director of the Human Service Agency and Health Officer for the County of Orange, testified concerning his responsibilities during a radiological emergency. (Tr. 9916, et. seq.) Dr. Ehling testified as to the availability of protective actions to be taken in the event of a radiological emergency and the decision-making process which would identify the protective action to be taken. Dr. Ehling explained how he perceived a coordinated response would result from among the various jurisdictions involved. Dr. Ehling explained his basis for determining whether sheltering would be an appropriate

protective action as compared with evacuation. Dr. Ehling also explained the appropriateness of a radioprotective drug therapy for the general population. (Id.)

74. Mr. W. Mecham, a San Clemente City Councilman, provided testimony to the Board in a non-official capacity. (Tr. 9994, et. seq.) Mr. Mecham expressed a series of personal concerns with respect to the state of emergency preparedness and planning in the City of San Clemente. (Id.)

75. Ms. C. Logue, an employee of the Vantage School, a non-profit school for special education children in San Clemente, and also President of the South Orange County Community Service Counsel, a volunteer group of human service providers established as a networking process and advocacy group for human services in the South Orange County area, testified in a non-official capacity. (Tr. 10,070, et. seq.) Ms. Logue described the types of special populations, e.g., handicapped individuals, seniors, etc., and their special needs in the event of a radiological emergency at SONGS 2 and 3. Transportation was identified as a major concern especially for the handicapped. In addition, Ms. Logue testified that the Vantage School had no specific plan for transportation in the event that there would be a nuclear incident calling for removal of that special population. Ms. Logue indicated that an evacuation for the handicapped would be a time-consuming process. Ms. Logue also indicated that the special groups in many instances have special needs, among them medication, which would have to be tended to at relocation and care centers. (Id.)

76. Mr. C. Fleming, Chief of the Mobility and Communications Barrier Section of the California Department of Rehabilitation, testified before the Board. (Tr. 10,107, et. seq.) Mr. Fleming was involved with the Governor's task force on seismic safety and in that capacity became concerned about the needs of the handicapped in an evacuation situation. These concerns are more fully set forth in Intervenors' Exhibit 22. In addition Mr. Fleming described the California disability survey conducted by his department to determine the number of handicapped individuals between the ages of 16 and 25 in the State of California. That survey identified that about 7% of the population are seriously disabled. (Intervenors' Exhibit 21) Mr. Fleming went on to describe the various types of physical disabilities to be expected in the population and special needs associated with those disabilities. (Id.)

77. Mr. J. Kearns, Deputy Director of the California Office of Emergency Services, provided testimony before this Board. (Tr. 10,127, et. seq.) Mr. Kearns was speaking on behalf of OES. Mr. Kearns related the history of the development of the State of California Nuclear Power Plant Emergency Response Plan. The operative version of that plan was admitted into evidence as Intervenors' Exhibit 23. Mr. Kearns also testified as to the role of the OES in the formulation of the emergency response plans in general. That role is to prepare a State plan for any type of emergency and to assist local government in the development of their emergency plans, to coordinate State resources in response to any emergency and to assist local government and private citizenry in recovering from an emergency. Mr. Kearns described the role of OES in the event of an actual radiological emergency at SONGS 2 and 3. The

State would activate its EOC and then be in contact with Orange and San Diego Counties regarding any special needs for resources from State agencies that would be of assistance to them. Simultaneously, personnel would be dispatched from Mr. Kearns' office and from the Radiologic Health Section of the California Department of Health Services. The Radiologic Health Section would play a role in dose assessment. However, local agencies have the direct responsibility for taking the actual emergency response. (Id.)

78. Dr. M. F. Reed, Chief of the Nuclear Power Plant Planning Section of the California Office of Emergency Services, testified before this Board. (Tr. 10,198, et. seq.) Dr. Reed testified that she had reviewed the State and local plans against the criteria of NUREG-0654 in May of 1981. These reviews were submitted to the local jurisdictions with comments. The State has not evaluated the actions taken by the local jurisdictions in response to the State's comments. Dr. Reed also described her role during the May 13, 1981 exercise as a representative of the State OES at the San Clemente EOC/EOF complex. In the view of OES, the exercise had been held prematurely in that SOPs were not complete and very little training had been done. Dr. Reed observed the decision-makers perform at the EOC/EOF during the May 13, 1981 exercise and noted that co-location of the facilities caused a great deal of confusion. Additional training would have been helpful. Also, additional coordination between decision-makers prior to actual implementation of protective actions is needed to avoid conflicting decisions. (Id.)

79. W. R. Bloom, a member of the San Clemente Planning Commission, testified before this Board in a non-official capacity. (Tr. 10,280, et. seq.) Ms. Bloom testified as to the projected growth in the San Clemente area as a result of ongoing development. Due to the desirability of the San Clemente area, substantial development can be anticipated. Ms. Bloom recounted the problems one might have in moving about the San Clemente area due to the absence of through streets. Ms. Bloom also noted the absence of any master circulation plan for the city of San Clemente and commented that travel through the city would be longer than if such roads were available. Evacuation times would be correspondingly affected. (Id.)

80. Mr. G. Caravalho, City Manger of San Clemente, testified before this Board. (Tr. 10,773, et. seq.) Mr. Caravalho described his duties in the event of a radiological emergency. Mr. Caravalho is the Director of Emergency Services and would be responsible for directing all aspects of the emergency response capability for the City of San Clemente. Mr. Caravalho further described his participation in the May 13, 1981 exercise and the concerns he developed as a result of his participation in that exercise. During the day, some problems arose relative to the decision-making process. There were some problems as to when to evacuate, and coordinate among involved jurisdictions to ensure that that activity went forward smoothly. Conflicts arose with respect to protective actions recommended by the various participants. Mr. Caravalho identified a need for additional training for the various decision-makers to help in reaching a decision with respect to protective actions. Mr. Caravalho also saw the need in the near future for an

alternative to I-5 as an evacuation route taking into consideration the growth anticipated in the San Clemente area. With respect to the functioning of the EOC/EOF complex at the San Clemente City Hall, Mr. Caravalho commented that the facility could have been better located and data displays could have been improved. The yellow phone system was over-taxed during the exericse. Speaker-phone capability would have been helpful. (Id.)

81. A substantial record was developed before this Board with respect to the capabilities of the Applicants and the various local and State organizations to respond to a radiological emergency and to consider, recommend and implement protective actions. The evidence is convincing to this Board, with the exceptions noted below, that protective actions are capable of implementation and would be effective. This Board has examined the record to see if any significant element relating to protective actions required further consideration and we concur with Mr. Nauman of FEMA in the items he has identified. (See Paragraphs 45 and 46 above.) These remaining matters should be resolved prior to full power operation. Nevertheless, the Board finds that there is reasonable assurance that offsite transient and permanent population within the plume exposure pathway EPZ for SONGS 2 and 3 can be evacuated or otherwise adequately protected in the event of a radiological emergency with offsite consequences occurring at SONGS 2 and 3. (See Findings 348 to 351 below)

82. In reaching the above conclusion, the Board is not unmindful of the concerns expressed by Intervenors' witnesses. In particular, we have considered the concerns raised by Ms. Ditty, Mr. Mecham, Ms. Logue and

Mr. Fleming regarding special notification and transportation problems and needs of the elderly and handicapped segments of the population potentially affected, those raised by Ms. Goodwin regarding the response activities of bus drivers, those of Mr. Caravalho and Dr. Reed regarding the need for additonal training and improvements in SOPs, the EOC/EOF facility and the decision-making process, and those raised by Ms. Bloom regarding complications due to future development and growth in the San Clemente area. We observe that these concerns, at least in part, are based on the state of knowledge and emergency preparedness as it existed prior to commencement of Applicants' program to address the deficiencies identified by FEMA. (See Staff Exhibit 11 and Applicants' Exhibit 144) With respect to the problems and needs of the elderly and handicapped, the testimony of Mr. Brothers describes the consideration given them in development the evacuation time estimates (see Finding 51) and we are satisfied that these concerns are adequately accounted for in the emergency plans. Mr. Brothers testified that he explicitly considered institutions and population elements which might require transportation assistance and the resources available for this purpose. In the event of an impending evacuation, the Manager, Orange County Emergency Services Division and/or the City Manager of San Clemente would communicate with special institutions and coordinate the dispatch of public transportation as necessary. Mr. Brothers further testified that special institutions such as schools, hospitals, nursing (retirement) homes, and persons who have restricted mobility due to age or chronic disability were carefully identified, quantified and appropriate transportation requirements estimated. (Brothers Testimony, pp. 17-18; pp. 27-29) Through the

Applicants' public information program, persons without transportation will have information regarding the telephone numbers to call for transportation. Transportation assembly points have been established and information regarding the location of these points has been and will continue to be made available to the transient and permanent population through the Applicants' public information program. In addition steps have been taken through a post card system to identify transportation needs in advance. (Id.; Cramer Testimony, pp. 9-19; Tr. 7462-63) The medical-related concerns for these special segments of the public are, in our view, resolved by the testimony of Mr. Nash of the Orange County Chapter of the Red Cross. (See Finding 61)

83. Mr. Brothers' testimony also addresses, in satisfactory fashion, the concerns raised regarding road capacities, bottlenecks and other route- and road-related problems which we believe might be comparable to those encountered as a consequence of future growth in the San Clemente area. (Brothers Testimony, pp. 22-27; Tr. 11,059-082) We would note further that the Commission's regulations recognize the evolving nature of emergency plans to address changing needs. (See 10 C.F.R. § 50.47(b)(14), Appendix E Section IV.G, and 10 C.F.R. § 50.54(t)) With respect to the role of OCTD in responding to an emergency, Mr. Brothers testified that emergency response procedures have been developed for the coordination of transportation assistance for evacuees. OCTD has developed specific procedures for coordinating the assignment of OCTD resources in the event of an emergency. This plan is included as Attachment 2 in the Orange County Emergency Response Plan. This should resolve the concerns raised by Ms. Goodwin in connection with

the activities and role to be played in an emergency by bus drivers. (Brothers Testimony, p. 31; Applicants' Exhibit 53)

84. In regard to the several concerns stated by Dr. Reed and Mr. Caravalho, we note that the matters are essentially the same as those identified as deficiencies by FEMA. (See e.g., Items 1, 2 and 6 of Enclosure 1 to Applicants' Exhibit 144) Thus, as we find below, the corrective actions proposed by Applicants (Id.), which have been concurred in by FEMA (Applicants' Exhibit 146), are adequate to resolve the concerns raised by Dr. Reed and Mr. Caravalho.

B. CONTENTION 2.A.

> Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:
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> * * *
>
> A. the procedures for notification by Applicants of State and local response organizations, 10 C.F.R. § 50.47(b)(5), and for notification of and continued communication among emergency personnel by all involved organizations, 10 C.F.R. § 50.47(b)(6);

85. Mr. John R. Sears was the witness for the NRC Staff concerning this contention. Mr. Sears addressed the procedures established by Applicants for notification of State and local response organizations, and Applicants' procedures for communication among the principal response organizations. (Sears Testimony of August 6, 1981, pp. 3-5)

86. Mr. Sears testified that Applicants' procedure 1.4 entitled, "Notification" provides detailed instructions for contacting offsite response agencies. This procedure includes Initial Notification forms

for each of the four classes of emergencies, an emergency notification call-list, and a follow-up notification. Although similar in format to the Initial Notification form, the follow-up notification form has more extensive technical content. (Sears Testimony of August 6, 1981, pp. 2, 4)

87. The Applicants' procedure 1.26 entitled "Communications" is similar to Emergency Plan Tables 7-1 and 7-2 and describes the communications systems that are available for emergency use, their location and their functions. (Sears Testimony of August 6, 1981, p. 4) Additionally, Applicants' procedures for Site and General Emergencies contain instructions for the periodic dissemination to offsite authorities of information on the status of onsite operations and conditions. (Id.)

88. Applicants' capability to implement notification and continued communication among emergency personnel was demonstrated during the full-scale exercise involving Applicants and offsite response organizations on May 13, 1981 to the extent that the procedures and systems employed during the SONGS Unit 1 exercise were similar to those established for SONGS Units 2 and 3. These procedures and systems proved to be workable and effective. (Sears Testimony of August 6, 1981, p. 5)

89. The Staff concluded that the Applicants' procedures for notifying offsite response organizations and for continued communication among emergency personnel of the involved response organizations conforms to the applicable criteria of NUREG-0654, and meets the planning standards of 10 C.F.R. § 50.47(b)(5) and (6). (Sears Testimony of August 6, 1981, p. 4)

90. FEMA presented testimony which addressed this contention as it relates to the ability of offsite response organizations to notify and communicate among emergency personnel. Mr. Kenneth Nauman, Jr. testified that he examined the procedures of offsite response organizations for notification and communication regarding emergency personnel in accordance with criteria II.E. and II.F. of NUREG-0654. Plans and procedures currently exist for such notification and communication. (Nauman Testimony of August 24, 1981, p. 7) There are a variety of notification methods. These methods include the siren system installed by Applicants as well as alternative methods involving the use of sirens and public address systems attached to the top of emergency response vehicles. (Nauman, Tr. 10,509)

91. The various response organizations are developing a standard operating procedure for continued communication among themselves in the event of a radiological emergency. (Nauman, Tr. 10,509-510)

92. Within fifteen minutes of declaring a radiological emergency at SONGS 2 and 3, the various response organizations could be notified. This is based on the communications system which exists in the various response organizations. (Nauman, Tr. 10,510)

93. The County of Orange has a highly sophisticated communication system including a 24 hour dispatch system, and has the total capability to respond. Also, the County of San Diego has a communication system which includes a 24 hour dispatch system, and they have the total capability to respond. The City of San Clemente has a communication system. Communication links exist between the City of San Juan

Capistrano and the communications system of Orange County. (Nauman, Tr. 10,510, 10,520)

94. The City of San Juan Capistrano does not have personnel available to man its dedicated emergency communication link (yellow phone) on a 24 hour per day basis. However, the County of Orange would assume the responsibility for alerting personnel. (Nauman, Tr. 10,511-512)

95. The Applicants' have dedicated emergency communication links (yellow phone) and redundant communication systems to relay information to the various response organizations in the Emergency Operations Facility (EOF). (Nauman, Tr. 10,510-511)

96. For the state parks located in the plume exposure pathway EPZ, a 24 hour response capability does exist. (Nauman, Tr. 10,516)

97. Interjurisdictional communication among the response organizations after the initial notification of an emergency was found to be sufficient. (Nauman, Tr. 10,522)

98. Mr. Nauman concluded that the procedures for notification of and continued communication among emergency personnel meet the planning standard of 10 C.F.R. § 50.47(b)(6). (Nauman Testimony of August 24, 1981, p. 7)

99. The Applicants also presented testimony related to this contention. Mr. Harold B. Ray, Station Manager of SONGS Units 1, 2 and 3, discussed the procedures that Applicants have established for notifying Federal, State and local response organizations of an emergency at SONGS 2 and 3 based on the classification of the emergency at a certain level. The classification levels are designated "Unusual Event,"

"Alert," "Site Emergency," and "General Emergency." (Ray Testimony, pp. 16-18) Mr. Ray described specifically the Federal, State and local response organizations that will be notified and the specific communication systems available both onsite and offsite for notification of such response organizations in the event of an emergency at SONGS 2 and 3. (Ray Testimony, pp. 18-23)

100. Mr. Ray testified that Applicants would maintain the capability to alert and activate the involved response organizations on a 24 hour per day basis. (Ray Testimony, p. 24) Furthermore, Mr. Ray described the means, including Initial Notification forms, for assuring that an emergency notification to Federal, State and local response organizations is received and understood. (Ray Testimony, pp. 24-26)

101. Mr. Ray also described the means and procedure to be used in notification and continued communication between onsite emergency personnel. This procedure includes the use of an overall emergency organization duty roster that is maintained by the Watch Engineer to ensure that personnel to fill key positions within the emergency organization are notified. (Ray Testimony, pp. 26-28) Mr. Ray further described the procedure to be used in maintaining communications between the SONGS 2 and 3 onsite emergency response organization and the involved offsite emergency response agencies during an emergency. This procedure involves the use of follow-up Notification messages, forms for which have been supplied to offsite agencies. (Ray Testimony, pp. 28-30)

102. Mr. Ernest L. Murri, a consultant, testified on behalf of the Applicants. He indicated that he has reviewed the equipment and standard operating procedures for notification of and continued communication

among emergency personnel by all involved organizations. Mr. Murri testified that each emergency operations center (EOC) has an Interagency Telephone, in addition to other communication systems including the Interagency Teletype system. (Murri Testimony, p. 74) Furthermore, Mr. Murri testified that provisions for 24 hour per day communication by involved response organizations exist, that provisions for communications between SONGS 2 and 3, the EOF, the various EOCs and radiological monitoring teams exist, and that provisions for alerting and activating emergency personnel in each response organization exist. (Murri Testimony, p. 75)

103. Mr. David F. Pilmer, Supervisor, Health Physics Emergency Group of the Nuclear Engineering and Safety Section, Southern California Edison, described the procedures for prompt notification by Applicants of State and local response organizations. Mr. Pilmer testified that the Emergency Coordinator has direct responsibility for such notification. (Pilmer Testimony, pp. 19-22)

104. Mr. Pilmer further testified that the primary means for conducting the prompt notification has been provided by installation of a special telephone circuit which was specifically engineered for this purpose and which is referred to as the "Interagency Telephone System." (Pilmer Testimony, pp. 19-20) Mr. Pilmer described the Interagency Telephone System and testified that the system provides 24 hour per day communications with the following jurisdictions: San Diego County; Camp Pendleton Marine Corps Base, Camp Pendleton; Pendleton Coast Office of the State Department of Parks and Recreation, San Clemente; Orange

County; City of San Clemente; City of San Juan Capistrano; and California Highway Patrol. (Pilmer Testimony, pp. 20-21)

105. The Applicants subpoenaed several witnesses who presented testimony relevant to this contention. Mr. Calvin Nash, Director of Disaster Services and Assistant Executive Director of the Orange County Chapter of the Red Cross testified that one of its facilities in the City of Santa Ana which is located in Orange County has a direct line with the communications network in Orange County (Orange County Control One), which is monitored and staffed 24 hours a day, seven days a week. (Nash, Tr. 8424) Each of the six facilities located in Orange County has a fixed site base station which does not operate off telephone lines. (Id.)

106. Mr. Nash also testified that nine personnel have pagers and are always on call, approximately 10 radio-equipped vehicles are maintained from their Santa Ana office, and that 31 additional radios have been pre-placed throughout Orange County in the cars of other volunteer staff. (Nash, Tr. 8424-25) Based on their procedures, the Orange County Chapter of the Red Cross would be notified as soon as an incident occurs at SONGS 2 and 3. Mr. Nash explained that an internal call-up procedure would be primarily used as a means of notifying staff and volunteers to respond for the purpose of staffing the reception and care centers. (Nash, Tr. 8425-26)

107. Mr. Jack Preston Stowe, Area Manager of the Pendleton Coast Area, State Department of Parks and Recreation testified that they have a dedicated phone (yellow phone) at their headquarters, along with an outside telephone which is connected with the communications center at

Orange County Control One. (Stowe, Tr. 8490, 8492) There is an outside bell at headquarters which allows for personnel who live nearby in San Clemente Beach to be alerted at night. (Stowe, Tr. 8490-91) Moreover, should no one respond to the call, there are backup procedures which provide for the use by Applicants' personnel at SONGS of direct telephone lines to supervisors. Aside from ordinary telephone communication at SONGS, Mr. Stowe testified that they have radio communications with SONGS through their channel-two frequency on which the State Park rangers operate. (Stowe, Tr. 8491-92)

108. For communications among State Park personnel, Mr. Stowe testified that they have a State Park radio which operates on several channels and repeaters for long distance communications. (Stowe, Tr. 8492) During the summer State Parks has a dispatch center which operates 24 hours a day. (Id.) Mr. Stowe further testified that they have a 30-foot rescue boat which has marine channels and is linked with the Orange County emergency channel. (Id.) That boat has radar, and is equipped with loudspeakers to communicate with people in the water and on other boats. (Stowe, Tr. 8493) The rangers have four-wheel drive vehicles at their disposal which are equipped with public address systems, and other communications equipment. (Id.)

109. Mr. Ronald Jack Coleman, Director of Fire Protection for the City of San Clemente and, as a collateral duty, Deputy Director of Emergency Services, testified that notification of an emergency would be received through the interagency telephone network which is linked to the City's emergency receiving center, which is essentially their Police Department dispatch point. (Coleman, Tr. 8584) This facility is staffed

on a 24 hour per day basis. There is a standard operating procedure which spells out, among other things, the specific steps for alerting key individuals within the emergency response organization on a 24 hour per day basis. (Coleman, Tr. 8584-85) Mr. Coleman described the various means available for communicating with emergency personnel within the City of San Clemente, and the means for communicating requests for mutual aid assistance from agencies including the State. (Coleman, Tr. 8585-88).

110. Ms. Cynthia S. Ferguson, Administrative Assistant to the Director of Public Works of the City of San Juan Capistrano, who is responsible for emergency coordination in the City, testified that the City's main function is communicating and coordinating communication between the response entities, and notifying and informing the public within the City. (Ferguson, Tr. 8684-85) Ms. Ferguson further testified that procedures for initial notification of emergency personnel are addressed in section 1(c) of the City's radiological emergency response plan. Ms. Ferguson explained the City's ability to receive notification of an emergency at SONGS on a 24 hour basis, which includes the use of the dedicated interagency telephone (yellow phone), or Orange County Communications Center, Control One for alerting the various emergency officials in the City of San Juan Capistrano. (Ferguson, Tr. 8697-98, 8720-21)

111. Mr. Donald W. Poorman, Manager and Chief of Communications Division of the General Services Agency, County of Orange, who has the responsibility for the operation of Control One, testified that the primary emergency communications center for the County of Orange is

Control One which is active 24 hours a day. (Poorman, Tr. 8760) Control One is a centralized coordination center for all public safety communications in the County. Public safety communications includes law enforcement, fire, and paramedic radio systems. In addition, all county local government radio systems are coordinated at Control One. (Poorman, Tr. 8754) Mr. Poorman also testified that initial notification by Applicants to local response organizations will originate in the SONGS control center and can be made to all primary emergency organizations using the dedicated telephone system (yellow phone). (Poorman, Tr. 8754-55)

112. Mr. Poorman described the capability of the message switcher at Control One along with group address codes to permit any terminals, including the SONGS terminal, to transmit a message once and then have it simultaneously delivered to all 85 terminals during an emergency. This allows on-duty personnel at government communications facilities to be alerted and kept up to date. (Poorman, Tr. 8755-56, 8770) Mr. Poorman testified that alerting elected officials or management employees is regularly and routinely done by Control One staff for large fires, chemical spills, and other emergencies. In an emergency regular telephones are employed to call each individual that would be involved in activating the EOC. At Control One, there is a minimum staff of five on duty at all times. (Poorman, Tr. 8756-57)

113. Mr. Poorman also described the radio communicatins capability among the law enforcement agencies, the fire departments, the paramedic service, and all mobile units and pack sets (radios which are the size of a brick) in the County of Orange. The capability to coordinate radio

communications among emergency personnel at Control One was described. (Poorman, Tr. 8757-8761, 8763-64, 8773) Employees of the County involved in emergency operations have pagers available to them which can be operated out of Control One or from any county telephone. (Poorman, Tr. 8763)

114. The County has three emergency mobile vehicles that are equipped to provide communications to the staff in the field. (Poorman, Tr. 8761) Mr. Poorman testified that the dedicated phone system (yellow phone) has the capability for anyone in the various EOC's to contact SONGS or Control One while communicating among the EOC's. (Poorman, Tr. 8771-72) Orange County has several communication links with emergency officials in the County of San Diego. (Id.) Moreover, two radio networks are available for communicating with the State EOC in Sacramento. (Poorman, Tr. 8781) Mr. Poorman explained the procedure for authenticating the initial notification message from SONGS. (Poorman, Tr. 8778)

115. Ms. Jill M. Swanson, Safety/Energy Coordinator for the Capistrano Unified School District, testified that the school district is in constant communication with Orange County for the purpose of determining when emergency services would need to be provided to the school district. (Swanson, Tr. 8793) Ms. Swanson described the 24 hour emergency call system that has been established for contacting emergency personnel, and testified that there is a standard operating procedure for the use of that system. (Swanson, Tr. 8797-99) Ms. Swanson also testified that the principals of the schools and the transportation

department would be notified if an emergency were declared. (Swanson, Tr. 8814)

116. Mr. Egbert S. Turner, Manager of the Emergency Management Division, General Services Agency, County of Orange, who is responsible, among other things, for coordinating disaster response activities and maintaining an EOC in a state of readiness, testified that he would receive notice of an emergency at SONGS 2 and 3 directly over the dedicated telephone (yellow phone). (Turner, Tr. 8900, 8913) Mr. Turner identified those who would receive the necessary notification by County Control One if the call came in outside of their normal operating hours. (Turner, Tr. 8913)

117. Mr. Turner also testified that Orange County has general jurisdiction over the City of San Juan Capistrano for public safety, medical and health matters as far as emergency response is concerned. (Turner, Tr. 8968-69)

118. Ms. Barbara Fox, Assistant Director, General Services Agency, in charge of Special Services, County of Orange, who has line responsibility for the Orange County Emergency Management Division among others, explained who would be alerted of a notification of an emergency at SONGS 2 and 3. (Fox, Tr. 9040-45)

119. Mr. James W. Hunt, Director of the Office of Disaster Preparedness for the County of San Diego, who has the responsibility, among other things, for managing the emergency response organization, testified that County Communications is responsible for receiving notification by the dedicated telephone (yellow phone) of an incident at SONGS 2 and 3. (Hunt, Tr. 9255, 9266) There is a staff officer on duty

24 hours a day, seven days a week, who receives notification of the incident and then confirms the validity of the incident. The person receiving the notification follows a standard operating procedure to alert other individuals within the San Diego County emergency response organization who can be reached on a 24 hour per day basis. (Hunt, Tr. 9266)

120. Lt. Col. Jack E. Wallace, Operations/Plans/Budget Officer in the Office of the Assistant Chief of Staff, Operations and Training, Marine Corps Base, Camp Pendleton, California, testified that the Corps has the dedicated telephones (yellow phones) along with a system to handle 10 other phones which are pre-plugged into the area inside their EOC. (Wallace, Tr. 9329) There are three dedicated telephones (yellow phones), one of which is manned 24 hours a day all year round. (Wallace, Tr. 9332) The duty officer who mans the dedicated telephone has been instructed in the event it's activated. Through the dedicated telephone (yellow phone) and the regular telephone system, the Corps has communication links with Orange County and other jurisdictions. (Wallace, Tr. 9330) Col. Wallace also testified that radio vehicles with high powered transmitters are used for backup communications. (Id.)

121. Col. Wallace testified that the liaison officer assigned to the San Clemente EOC, and the monitoring and survey teams have the capability for instantaneous communication with Camp Pendleton's EOC at all times. (Wallace, Tr. 9330) The medical teams available on Camp Pendleton have coordinated communication links with the rest of the base. (Wallace, Tr. 9352-53) Also, the medical treatment teams have the

communication's capability to keep in contact with other members of the response organization. (Wallace, Tr. 9354-55)

122. The Intervenors subpoenaed witnesses who provided testimony concerning this contention. Ms. Jan Goodwin, General Chairman of the United Transportation Union, Local 19 who represents the drivers and mechanics of the Orange County Transit District, testified that the buses have a direct communication line to the dispatcher. (Goodwin, Tr. 9909) The dispatcher can communicate with all of the bus drivers in the fleet simultaneously; however, only one bus driver at a time could make an inquiry of the dispatcher. (Godwin, Tr. 9909-10)

123. Mr. John Kearns, Deputy Director of the California Office of Emergency Services, (OES), testified that, in the event of a radiological emergency at SONGS 2 and 3, the State EOC would be activated and radio contact would be made with Orange and San Diego Counties. (Kearns, Tr. 10,176)

124. Dr. Mary Frances Reed, Chief of the Nuclear Power Plant Planning Section, California Office of Emergency Services, testified that, during the course of her office's informal review of the various response plans of the local jurisdictions in May, 1981, they were unable to determine whether response organizations could receive alert on a 24 hour basis since the procedures were not made available for the review. (Reed, Tr. 10,202, 10,244) Dr. Reed explained that at the time of the informal review she did not have procedures that identified the titles of individuals on the communication systems for the Orange County plan. Dr. Reed believed that this could result in persons not receiving appropriate training in what is to be

done if a notification is received from the plant. (Reed, Tr. 10,244, 10,257-58) OES has a center which can receive notification of an incident at SONGS 2 and 3 on a 24 hour basis. The center is manned by personnel who know what to do when notifications of any type are received. (Reed, Tr. 10,258)

125. Mr. George Caravalho, City Manager of San Clemente, who participated in the May 13, 1981 exercise as the director of emergency services testified that there were some problems of coordinating communications with other response organizations. (Caravalho, Tr. 10,777-78) Mr. Caravalho testified that he believed the dedicated telephone line (yellow phone) was overtaxed during the May 13, 1981 exercise. (Caravalho, Tr. 10,800) With respect to the dedicated telephone line, Mr. Caravalho indicated his awareness that a teletype system is being installed to supplement the communication abilities of the system. (Caravalho, Tr. 10,810)

126. With respect to the items identified by Dr. Reed and Mr. Caravalho, the matters raised appear to be the same as previously discussed in Findings 82 and 84 above and will not, therefore, restate our view on them.

127. Based on the record as a whole with respect to this contention, we find that there is reasonable assurance that the procedures for notification by Applicants of state and local response organizations and for notification of and continued communication among emergency personnel will meet the planning standard of 10 C.F.R. § 50.47(b)(6).

C. CONTENTION 2.B.

Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:

* * *

B. the means for notification and instruction to the populace within the plume exposure pathway Emergency Planning Zone, 10 C.F.R. § 50.47(b)(5);

128. Mr. John R. Sears, the witness for the NRC Staff, presented testimony on the Applicants' means for notification and instruction to the populace within the plume exposure pathway EPZ. The Staff has examined the means employed by Applicants for such notification and instruction. (Sears Testimony of August 6, 1981, p. 5) Mr. Sears testified that the Applicants have designed a siren system for the purpose of alerting the public within 10 miles of SONGS to tune in to local radio stations for emergency instructions. (Id.) Furthermore, Mr. Sears explained that the total siren system is scheduled to be operational by September 1, 1981.[1/] A map showing siren levels has been submitted by Applicants along with analytical results of the sound levels to be anticipated. (Id.)

129. Mr. Sears explained that special arrangements for notifying persons on remote hiking trails are unnecessary since sirens are located on the bluffs in San Onofre State Park. For transient boats in extended

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1/ We would note in passing that the Commission has published a proposed rule extending the date by which the prompt notification systems required by 10 C.F.R. § 50.47(b)(5) must be in place, to February 1, 1982. 46 Fed. Reg. 46587.

water areas, special arrangements are through the Coast Guard in San Diego which would phone to boats or send a helicopter. (Sears, Tr. 10,678)

130. For the purpose of providing information to offsite authorities concerning the radioactive material released and the meterological conditions, the Applicants are installing a sophisticated post-accident sampling system, high range monitors and a backup meteorology tower. In addition, the Applicants have specifically designed their monitoring systems and made tracer studies of the wind directions from the plant. (Sears, Tr. 10,680-682) Mr. Sears testified that the present lack of accurate meteorological data would not affect notification time since the notification would be made based on the operator's observations in the control room. (Sears, Tr. 10,684) In reviewing the Applicants' emergency plan, the Staff took account of the time it would take for people assessing the accident to communicate the message notifying offsite response agencies. (Sears, Tr. 10,721)

131. The NRC Staff concluded that the means for notification and instruction to the populace within the plume exposure pathway EPZ satisfies the criteria of NUREG-0654, II.E and Appendix 3, and meets the planning standard of 10 C.F.R. § 50.47(b)(5). (Sears Testimony of August 6, 1981, p. 6)

132. Mr. Kenneth W. Nauman, Jr. of FEMA presented testimony concerning the offsite response organizations' means for notification and instruction to the populace within the plume exposure pathway EPZ. FEMA applied the standards of NUREG-0654/FEMA REP-1, Rev. 1, Part II.E in examining the means established by offsite response organizations for

such notification and instruction. (Nauman Testimony of August 24, 1981, p. 7) The emergency plans of local jurisdictions contained several means that will be used for notifying and instructing the populace within the plume exposure EPZ. These means include governmental telecommunications systems, government vehicles, media, sirens, and Emergency Broadcast System (EBS) equipment. (Id., Tr. 10,534-35)

133. The Applicants have completed the installation of the sirens as of August 8, 1981. (Nauman, Tr. 10,535, 10,922) Mr. Nauman testified that, in terms of siren output and positioning, the preliminary examination of the standards under which the sirens were installed indicate that the sirens meet the NUREG-0654 criteria. (Nauman, Tr. 10,537) The need for coordinated use of the sirens does not present a problem since the actions that have been taken by the interjurisdictional planning committee and the SOPs under development will adequately address that need. (Nauman, Tr. 10,538-39)

134. Mr. Nauman concluded that the means for notification and instruction to the populace within the plume exposure pathway EPZ meet the planning standard of 10 C.F.R. § 50.47(b)(5), provided that further actions to test and place in the hands of local jurisdictions the siren controls are ongoing and the observation of the siren test and validation of the sirens technical criteria remain to be accomplished. (Nauman Testimony of August 24, 1981, p. 8, Tr. 10,537, 10,922)

135. The Applicants also presented testimony regarding this contention. Mr. T. James Dubois, Senior Engineer and Supervisor of Technical Support Group, SCE, described the prompt alerting system being installed in the 10 mile EPZ around SONGS 2 and 3, discussed the reasons

for the selection of that system and the method of its operation. (Dubois Testimony, pp. 2-26) Mr. Dubois testifed that the prompt alerting system will have the capability of providing a tonal alerting (acoustic) signal throughout all populated areas of San Clemente, San Juan Capistrano, Capistrano Beach, in industrial areas of Orange County, and, within San Diego County, at residential and administrative areas of Camp Pendleton Marine Corps' quarters and at Doheny, San Clemente, and San Onofre State Beaches, which lie within the 10 mile EPZ. (Dubois Testimony, pp. 3-4) This system is designed to provide a primary means of alerting the public within the 10 mile EPZ that broadcast media such as commercial broadcast media and special systems such as NOAA radio, should be consulted. (Id.)

136. Mr. Dubois described the guidelines used in designing the prompt alerting system, the configuration of the system, the locations of the sirens, the responsibilities for their activation and control, and the locations and appropriate coverage of each siren. (Dubois Testimony, pp. 4-6, 16-20, Applicants' Exhibits 60 and 61) Mr. Dubois also described the outdoor coverage of sirens during nighttime and daytime hours, and the indoor coverage of sirens in the populated areas of San Juan Capistrano, San Clemente, and Orange County. (Dubois, Tr. 8733-39, Applicants' Exhibit 135)

137. Mr. Dubois explained the basis for selecting siren locations and how the sirens will be controlled. (Dubois Testimony, pp. 16-22) In addition, Mr. Dubois described the actual sound which will be emitted by the sirens, the types of tests planned for the prompt alerting system

equipment and the plans which have been made to test the effectiveness of the system. (Dubois Testimony, pp. 14-15, 22-26)

138. Mr. Eugene N. Cramer, Engineer for Advanced Energy Systems, SCE who is a member of the San Onofre Emergency Support Organization provided testimony addressing the means of instruction to the populace within the plume exposure pathway EPZ. Mr. Cramer testified that in order to coordinate dissemination of information to the news media during an emergency at SONGS 2 and 3, the Public Information Officers (PIOs) of the local response agencies have agreed to relocate to an Emergency Media Center. Based upon review of technical information previously sent to their EOCs, these PIOs would aid in coordination of the release of information. (Cramer Testimony, p. 19)

139. Mr. Cramer also testified that coordination of the actual instructions to the public to take various protective actions is accomplished by communication of technical information from SONGS 2 and 3 to the various response agencies at their EOCs, and by discussion among the liaison officers at the interim Emergency Operations Facility (EOF). As each response agency takes action, communications with the public would include disseminating the information to those at the Emergency Media Center. (Cramer Testimony, p. 20)

140. Mr. Cramer identified the principal response agencies which would be involved in disseminating information to the public in the event of an emergency. (Id.) He also identified the locations, phone numbers and designated individuals who would normally serve as the point of contact with the news media for the principal response agencies. (Cramer Testimony, p. 21, Applicants' Exhibit 72) Mr. Cramer described the

Emergency Media Center in detail, including the equipment, its features and floor plans. (Cramer Testimony, pp. 21-24, Applicants' Exhibits 73 and 74)

141. The PIOs have a management structure to control the Emergency Media Center, and they are developing an SOP for the operation and management of that center. (Cramer Testimony, pp. 25-27) Mr. Cramer described that management structure. (Cramer Testimony, p. 25)

142. A nuclear engineer familiar with the communication of technical information to the public and to the media will be assigned to the Emergency Media Center, in the event the center is activated. (Cramer Testimony, p. 28) Mr. Cramer indicated that all necessary supplies and equipment, including the telephones for each PIO have been pre-positioned at the Emergency Media Center. (Cramer Testimony, pp. 28-29) The essential elements of opening the Emergency Media Center can now be done within 15 minutes of arrival of the initial public-contact person of the Applicants.

143. An orientation course has been held for the PIOs and a similar course is to be held for the news media personnel. (Cramer Testimony, pp. 30-31) A limited dedicated Emergency Communications Network would be used to routinely provide technical information from SONGS 2 and 3 or the EOF to the various EOCs for the purpose of evaluating situations in the various geographical areas, and for public-protection action. (Cramer Testimony, pp. 32-33, Applicants' Exhibit 77) Mr. Cramer described the arrangements established by the Emergency Media Center for the timely exchange of information among designated spokespersons. (Cramer Testimony, pp. 33-34)

144. Mr. Harold B. Ray provided testimony which addressed notification and instruction to persons in the SONGS 2 and 3 Beach Area. Mr. Ray described the means for emergency notification and emergency action instruction to persons in the SONGS 2 and 3 Beach Area in the event of an emergency, including the Beach Area Public Address system and the five sirens located within land area subject to the jurisdiction of State Department of Parks and Recreation, which can be activated at SONGS. The other means to be used to provide emergency information to the public would be the Emergency Broadcast System (EBS) or other radio stations for which, upon activation of the public alert system, assigned participating governmental organizations will authorize transmission of taped emergency messages based on information provided from SONGS. (Ray Testimony, pp. 32-33)

145. The Applicants subpoenaed several witnesses from local response organizations who provided testimony concerning this contention. Mr. Jack Preston Stowe of the State Department of Parks and Recreation testified that they have a 30-foot rescue boat which has marine channels, radar, and is equipped with loadspeakers to communicate with people in the water and on other boats. (Stowe, Tr. 8492-93) The rangers have four-wheel drive vehicles which are equipped with public address systems, and other communications equipment. (Stowe, Tr. 8493)

146. Mr. Stowe also testifed that there are three sirens located in the state parks and beaches at the bluffs, and there are several others which can be heard in some park areas although they are not located in the parks. (Stowe, Tr. 8497) The controls for activating the sirens are at SONGS Unit 1. Those controls were placed there at the request of the

State Department of Parks and Recreation because of the possiblity that State Parks personnel might not be available to immediately turn on the sirens to warn people. (Id.) However, the Department of Parks and Recreation has made arrangments so that they could request that the sirens be activated in an emergency. (Stowe, Tr. 8497-98) There are loudspeakers on the perimeter fence for SONGS which are located where there is a nearby surfing beach just north of the plant. These loudspeakers appear to be loud enough to be heard by people on Surfing Beach. (Stowe, Tr. 8499) The notification of people on the beach of a decision to evacuate would be done by using six sedans having loudspeaker capabilities and by the jeeps on the beach. (Stowe, Tr. 8500)

147. Mr. Ronald Jack Coleman, Director of Fire Protection, Deputy Director of Emergency Services for the City of San Clemente, described the procedure for briefing the media at the EOC before the emergency media center is established. (Coleman, Tr. 8595) Mr. Coleman explained who is responsible for providing notification and instruction to the general public within the City of San Clemente of an incident occuring at SONGS. (Coleman, Tr. 8596)

148. Mr. Coleman testified that there are a variety of means for giving notification and instruction to the public in the City of San Clemente. These means include the use of the county-wide emergency broadcast system and the use of a special telephone line which allows automatic contact with persons in the newsroom of the local radio for the purpose of disseminating information over the air. (Coleman, Tr. 8506-97) There are approximately 19 to 21 vehicles in the City which are equipped with public address systems. However, the City has limited

resources available to use these vehicles to provide information to the public. (Coleman, Tr. 8597-98)

149. The siren system has been installed in the City of San Clemente and there are plans for a full test of that system. Mr. Coleman testified that they plan to develop a standard operating procedure for use of the siren system. (Coleman, Tr. 8599) There are several model press releases that have been developed for use, which were patterned after the Orange County press releases. (Id.) Mr. Coleman described how the public notification system might be coordinated, including the involvement of the interjurisdictional planning committee which consists primarily of the principal response organizations. (Coleman, Tr. 8600-01)

150. Ms. Cynthia S. Fergusor, Administrative Assistant to the Director of Public Works for the City of San Juan Capistrano, testified that public notification will be performed through the newly installed City siren system, which has control panels located in City Hall and will be activated in accordance with the City's emergency plan. (Ferguson, Tr. 8690) It is planned that the entire siren system will be tested in a coordinated effort involving the other principal response organizations, and annual audible testing will follow. (Ferguson, Tr. 8690-91) Ms. Ferguson explained who is responsible for notifying and providing instruction to the general public of an incident at SONGS. (Ferguson, Tr. 8696-97) Ms. Ferguson described how they would access the emergency broadcast system for the notification and instruction of the people in San Juan Capistrano. (Ferguson, Tr. 8697)

151. Mr. Donald W. Poorman, Manager and Chief of Communications Division of the General Services Agency, County of Orange, testified that Orange County has developed an emergency broadcast system in cooperation with local broadcasters for notification and instruction to the populace. (Poorman, Tr. 8757) A remote pickup transmitter will be installed at Orange County center at Control One. During the early stages of an emergency, the staff of Control One will provide information to the County control station (KEZY). (Id.) The Public Information Officer staff will supervise the release of information to the public after the EOC is activated. (Id.)

152. Mr. Egbert S. Turner, Manager of the Emergency Management Division, General Services Agency, County of Orange, testified that the controls to activate the sirens installed in the County of Orange are located in the communications center (County Control One). (Turner, Tr. 8913-14) Mr. Turner described the the decision-making process for activation of the sirens and indicated that an SOP is being developed for coordinating the decision with other jurisdictions. (Turner, Tr. 8914) There are means available for the local jurisdictions to coordinate the use of sirens. (Turner, Tr. 8916)

153. Mr. Turner testified that provisions are being made to implement a special system for EBS network in Orange County. (Turner, Tr. 8915) Should it become necessary, there are provisions for contacting the Los Angeles EBS network through County Control One for the purpose of having broadcasting information concerning the County. (Turner, Tr. 8915, 9000-03) Because of the County's standing relationship with local stations, the stations can be contacted for

assistance in broadcasting emergency information provided by the County. (Turner, Tr. 8915-16) Mr. Turner further testified that County emergency vehicles with public address systems or sirens are available to provide notification to the public. (Turner, Tr. 8916)

154. Mr. James W. Hunt, Director of the Office of Disaster Preparedness for the County of San Diego, testified that the Office of Disaster Preparedness is responsible for notifying and instructing the general public within the County of San Diego of an incident at SONGS. (Hunt, Tr. 9272) Mr. Hunt described the means available for communicating directly with the public, which include the emergency broadcast system, the Lifesaving Information for Emergencies system and police cars with mounted public address systems. (Hunt, Tr. 9272-73) The County has devised standard operating procedures for notifying the public of disasters, including a radiological emergency at SONGS. (Hunt, Tr. 9273) During an actual emergency in which the EOC is activated, the Office of Disaster Preparedness (ODP) would be supported by a media team trained by ODP to respond. (Id.) The ODP Staff would provide the media team with information which would be coordinated with the media center in San Clemente and then released to the public. (Id.)

155. Lt. Col. Jack E. Wallace, Operations/Plans/Budget Officer in the Office of the Assistant Chief of Staff, Operations and Training, Marine Corps Base, Camp Pendleton, California, testified that the Corps has agreed, through his participation in the interjurisdictional planning committee, to activate the sirens at Camp Pendleton in conjunction with the other jurisdictions. (Wallace, Tr. 9333) Because of the Corps' national defense mission, however, the Corps has retained the option of

activating the sirens at Camp Pendleton independently should that be required after providing notice to all other jurisdictions. (Wallace, Tr. 9333-34) Col. Wallace described the three different methods of alerting the people who may on the beach located on the property of the Marine Corps Base at Camp Pendleton. (Wallace, Tr. 9334-35) These means include the use of security personnel, public alert teams (military police) and helicopters. (Wallace, Tr. 9335)

156. The Intervenors subpoenaed witnesses who presented testimony regarding this contention. Mr. William Mecham, a San Clemente City Councilman, testifying in a non-official capacity, stated that there is a siren system which has been installed throughout the City of San Clemente. (Mecham, Tr. 10,045) Mr. Mecham described his understanding of how the NOAA radio system operates and the features he considered advantageous as compared to the siren system. (Mecham, Tr. 10,046-48)

157. Dr. Mary Frances Reed, Chief of the Nuclear Power Plant Planning Section, California Office of Emergency Services, testified that at the time her office conducted an informal review of the response plan of the various local jurisdictions against the criteria of NUREG-0654 in May 1981 the planning process was not complete, the SOPs were not supplied in nearly all cases and some plans had not been finalized. (Reed, Tr. 10,213-14, 10,263-64) Consequently, her office could not determine where specific functions could be adequately performed. (Reed, Tr. 10,214) Moreover, her office has not had the opportunity to assess the actions taken by the local jurisdictions in response to the informal review conducted in May 1981. (Reed, Tr. 10,266) During the informal

review, Dr. Reed noted that the procedure for notifying persons who had not received the initial alert was not uniform among the local jurisdictions. (Reed, Tr. 10,246-47) Dr. Reed also indicated that some of the sample public messages included in the Orange County plan need more work. (Reed, Tr. 10,247, 10,249)

158. Dr. Reed's concerns again appear to be based on her knowledge of events and the state of planning prior to development of the Applicants' plan for corrective action, as we have discussed in Findings 82 and 84 above. In light of findings with respect to resolution of these matters, Dr. Reeds' concerns do not detract from our ability to favorably resolve this contention.

159. Accordingly, on the basis of the record developed on this contention, we find that we have reasonable assurance that the means for notification and instruction to the populace within the plume exposure pathway Emergency Planning Zone will comply with the requirements of 10 C.F.R. § 50.47(b)(5).

D. CONTENTION 2C

Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:

* * *

C. the information and the procedures for dissemination of the information to the public within the plume exposure pathway Emergency Planning Zone on a periodic basis on how they will be notified and what their actions should be in the event of an emergency, 10 C.F.R. § 50.47(b)(7);

160. Mr. John R. Sears was the witness for the NRC Staff regarding this Contention. Mr. Sears evaluated the Applicants' procedures for periodically providing information to the public within the plume exposure pathway EPZ on how they will be notified and what their initial actions should be in the event of an emergency. (Sears Testimony of August 6, 1981, pp. 6-7)

161. Mr. Sears testified that the Applicants have mailed an informational brochure to residents of San Clemente, San Juan Capistrano, Capistrano Beach and Dana Point. (Sears Testimony of August 6, 1981, p. 6) This document provides a general outline of public notification, sheltering and evacuation procedures, and a detailed map of evacuation routes and location of reception and care facilities. (Id.) The mailing of the brochure was preceded by a newspaper advertisement containing instructions on how to obtain a copy for those members of the public who may not have received the brochure through the mail. (Id.) Furthermore, new applicants for electrical service are given complete emergency planning information. (Id.) The Staff has reviewed a draft handbook that Applicants will be providing to the public which contains, among other things, educational information on radiation. (Sears, Tr. 10,687-88, Applicants' Exhibit 148) Mr. Sears testifies that the total public education program for the plume exposure pathway EPZ is scheduled for full operation by the fall of 1981. (Sears Testimony of August 6, 1981, p. 6-A) On an annual basis, the Applicants will provide simplified mailers and newspaper advertisements to remind resident of the emergency planning educational program. (Id.)

162. For the transient population within the plume exposure pathway EPZ, posters would be displayed in recreational areas, motels, restaurants and other businesses. These posters would instruct people on what to do in an emergency. (Sears, Tr. 10,689, 10,722) A flyer has been printed for all park visitors which contains emergency planning information. Also, emergency response posters have been designed for motels and hotels. (Sears Testimony of August 6, 1981, p. 6) The next issue of the telephone directory will have a page of emergency public notification information and protective action instructions. (Sears Testimony of August 6, 1981, pp. 6-6A, Tr. 10,722)

163. The information to be disseminated to the news media would be very similar to the information contained in Applicants' proposed handbook. (Sears, Tr. 10,698, 10,702, Applicants' Exhibit 148) For rumor control, the Applicants have an extensive series of telephones available for people to call in and receive precise information. (Sears, Tr. 10,690-91) The public would not have to rely on use of the telephone in order to receive correct information because such information would be provided by local radio and television stations. (Sears, Tr. 10,691)

164. The Staff concluded that the Applicants' procedures for dissemination of information to the public within the plume exposure pathway EPZ on how the public will be notified and what its initial actions should be in the event of an emergency, satisfies the criteria of NUREG-0654, II.E and Appendix 3, and meets the planning standard of 10 C.F.R. § 50.47(b)(5).

165. Mr. Kenneth W. Nauman, Jr. of FEMA provided testimony concerning this contention. Mr. Nauman testified that he examined the

procedures established by offsite response organizations for the periodic dissemination of information to the public within the plume exposure pathway EPZ on how the public will be notified and what its initial action should be in the event of an emergency at SONGS 2 and 3. (Nauman Testimony of August 24, 1981, p. 8) There are procedures which indicate that the Applicants will periodically disseminate information by mailings to the public. (Id.) For the transient population within the plume exposure pathway EPZ, the dissemination of information through motels, recreation areas, and other transient locations is planned. (Id.)

166. Mr. Nauman testified that he reviewed the information packet that had been mailed to various persons within the plume exposure EPZ. That document adequately identifies the evacuation routes to be used in the event an evacuation is necessary. (Nauman, Tr. 10,542)

167. An emergency public information program has been established and the program is ongoing in nature. (Nauman, Tr. 10,926) Furthermore, notification to the public within the plume exposure pathway is being provided. (Id.) The local jurisdictions have identified procedures for the dissemination of emergency information to the public. (Id.) Mr. Nauman concluded that the procedures established for periodically disseminating information to the public within the plume exposure EPZ meet the planning standard of 10 C.F.R. § 50.47(b)(7). (Nauman Testimony of August 24, 1981, pp. 8-9, Tr. 10,543)

168. The Applicants also presented testimony relevant to this contention. Mr. Eugene N. Cramer, Engineer for Advanced Energy Systems, SCE, who is a member of the San Onofre Emergency Support Organization, described how the Applicants plant to make information periodically

available to the public and educate the public in advance on what should be done in the event of an emergency at SONGS 2 and 3. (Cramer Testimony, pp 7-19) In designing the program to disseminate the necessary information to the public, the Applicants worked closely with the principal local response organizations. (Cramer Testimony, p. 7)

169. Mr. Cramer testified that the educational program will be a continuing one and is designed for residents and transients. (Id.) The program includes newpaper advertisements, posters given to businesses and organizations, presentations directly to neighborhood groups and organizations, presentations through cable TV and local radio stations, and distribution of information to new residents as they apply for electrical service. (Cramer Testimony, p. 8) Mr. Cramer described how residents and organizations would be reminded annually of the education program. (Id.) He also described the specific content of the information that will be provided to the public and the efforts that will be made to assure that residents and transients receive it. (Cramer Testimony, p. 8-18) The elements of the general educational program will be repeated annually. (Cramer Testimony, p. 18)

170. Mr. Cramer described in detail the steps Applicants have taken and the procedures that will be employed in controlling rumors involving the public and Applicants' employees. (Cramer Testimony, pp. 34-41) Mr. Cramer testified that Applicants plan to conduct briefings for the news media at least annually consistent with the Applicants' public information program. (Cramer Testimony, p. 41) These briefings will include general information about radiation, updates on the emergency

plans and the points of contact for release of public information in the event of an emergency. (Id.)

171. The Applicants subpoenaed several witnesses from local response organizations who presented testimony regarding this contention. Mr. Jack Preston Stowe of the State Department of Parks and Recreation (State Parks) testified that the Applicants have supplied State Parks with various posters and flyers for use at the beaches. (Stowe, Tr. 8493) State Parks worked with Applicants in developing the posters and flyers, and approved the content (i.e., language, maps, designations) of those documents. (Stowe, Tr. 8493-94) A private contractor will install bulletin boards for the posters. State Parks will maintain the posters to assure that the posters are legible and that the posters have not been defaced. (Stowe, Tr. 8495-96) Mr. Stowe testified that the flyers will be available at the entrance stations to the campgrounds and beaches. (Stowe, Tr. 8496)

172. Mr. Ronald Jack Coleman, Director of Fire Protection, Deputy Director of Emergency Services for the City of San Clemente, testified that the City has been involved in Applicants' development of a public education program for the City of San Clemente. Mr. Coleman testified that the public education material that has been distributed contains essential information from the City's emergency plan, as well as matters he considers important to the successful implementation of the City's emergency plan. (Coleman, Tr. 8577) Mr. Coleman described the City's efforts to identify those persons who have special needs for the purpose of interfacing these needs with the emergency plan's transportation SOPs. (Coleman, Tr. 8578-79)

173. Ms. Cynthia S. Ferguson, Administrative Assistant to the Director of Public Works for the City of San Juan Capistrano, testified that she was involved in the Applicants' development of a public education program for the City. (Ferguson, Tr. 8693) Ms. Ferguson also testified that the entire City of San Juan Capistrano will be included in the public education program. (Ferguson, Tr. 8693-94) The County of Orange will process the various response cards received as a result of Applicants' mailing of a public information pamphlet because the City of San Juan Capistrano has no capability to provide transportation to individuals having special needs. The County of Orange will make the necessary transportation arrangements to handle those individuals having special needs. (Ferguson, Tr. 8694-95)

174. Ms. Jill M. Swanson, Safety/Energy Coordinator for the Capistrano Unified School District, testified that the school district would cooperate with and assist in the implementation of the Applicants' public education program. The school district could provide facilities (school sites), speakers that are needed, and notification to students and their parents that these public education programs will be provided. (Swanson, Tr. 8796-97)

175. Mr. Egbert S. Turner of the General Services Agency for the County of Orange testified that the County has been involved in the development by Applicants of the public education program for Orange County. (Turner, Tr. 8907-08) The County of Orange has received responses from the emergency information pamphlet (Applicants' Exhibit 66) which was mailed to residents. (Turner, Tr. 8908) Mr. Turner testified that the County is processing those responses to

determine persons having special needs (e.g., those having a hearing or visual impairment, or are otherwise handicapped) for the purpose of making special arrangements for them. (Turner, Tr. 8908-09) Mr. Turner further testified that the County would augment the Applicants' public education program on a periodic basis with a program of presentations to civic groups. (Turner, Tr. 8909)

176. Mr. Turner testified a media center would be established to aid in the coordination of information being provided to the public in the event of a radiological emergency at SONGS 2 and 3. (Turner, Tr. 8916-17) Mr. Turner described the rumor control system of Orange County, which includes the capability to monitor the information that would be provided. (Turner, Tr. 8917-18)

177. Ms. Barbara Fox, Assistant Director, General Services Agency, County of Orange, in a letter dated August 3, 1981, from Orange County to the Regional Director of FEMA (Applicants' Exhibit 141), indicated that the County will coordinate live news briefings with the press through the Emergency Public Information Office Center located near the EOC in the event of a radiological incident at SONGS 2 and 3. (Fox, Tr. 9033-35)

178. Mr. James W. Hunt, Director of the Office of Disaster Preparedness for the County of San Diego, testified that the County has developed a public education program for the citizens of the County of San Diego. (Hunt, Tr. 9265) The County has used several means of disseminating information to its residents, including the distribution of pamphlets and brochures to a number of sources, placing feature articles in newspapers and participating in radio and TV programs. (Id.) These

means would be used to disseminate information periodically to the public on the County's radiological emergency response plan. (Id.)

179. Mr. Hunt testified that during an emergency the County has the support of a media team which has been trained by the County's Office of Disaster Preparedness. (Hunt, Tr. 9273) The media team has a standard operating procedure for its response during an emergency. (Hunt, Tr. 9273, 9288-89) A County PIO responds to the emergency media center in San Clemente in the event of a radiological emergency at SONGS 2 and 3. (Hunt, Tr. 9274) Mr. Hunt described the method established by the County for controlling rumors. (Hunt, Tr. 9273-74)

180. Lt. Col. Jack E. Wallace, Operations/Plans/Budget Officer in the Office of the Assistant Chief of Staff, Operations and Training, Marine Corps Base, Camp Pendleton, California, testified that the Corps has distributed a public education document concerning evacuation routes and other information (Applicants' Exhibit 67) to all the persons residing in Camp Pendleton. (Wallace, Tr. 9327-28) Col. Wallace also described the Corps' plan to engage in additional efforts in the area of public education. (Wallace, Tr. 9328-29)

181. The Intervenors subpoenaed witnesses who provided testimony addressing this contention. Ms. Marilyn Ditty, Executive Director of the San Clemente Seniors, Inc., testified that some members of the special population known as the frail-at-risk elderly would forget information as a consequence of senile dementia. (Ditty, Tr. 9848) There are some older persons who would not complete the response cards that were sent out with the information packets, unless there is someone to assist them. (Ditty, Tr. 9864-65) Ms. Ditty indicated that the organization she is

with would be willing to assist the City of San Clemente in identifying and notifying their elderly people. (Ditty, Tr. 9860-61)

182. Mr. William Mecham, A San Clemente City Councilman, testifying in a non-official capacity, expressed some personal concerns about whether the public education program planned for San Clemente would be intense enough to adequately educate the public to respond to an emergency. (Mecham, Tr. 10,039-41) Mr. Mecham testified that he would cooperate with the Applicants in providing educational materials and programs to the citizens of the City of San Clemente. (Mecham, Tr. 10,065-66)

183. Mr. Charles Fleming, Chief of the Mobility and Communications Barrier Section, California Department of Rehabilitation testified that an educational effort would have to be made with the handicapped to teach them what to do for an evacuation or for an emergency. (Fleming, Tr. 10,118, 10,120) Mr. Fleming testified that his office would assist Applicants in identifying those principal community groups representing the physically handicapped community in the plume exposure pathway EPZ. (Fleming, Tr. 10,122-23)

184. Ms. Wilma Ruth Bloom, a member of the San Clemente Planning Commission and the owner of a business in City of San Clemente, testified that she had received certain mailings from Applicants concerning emergency planning information. (Bloom, Tr. 10,302-06) Ms. Bloom raised questions with a city official about how to keep the transient population informed about emergency planning. (Bloom, Tr. 10,305) Ms. Bloom further testified that she would display a poster on emergency planning in her business if requested. (Bloom, Tr. 10,303, 10,310) Moreover,

Ms. Bloom indicated that she would assist in informing the transient population of San Clemente of emergency plans and procedures. (Bloom, Tr. 10,310)

185. Mr. George Caravalho, City Manager of San Clemente, testified that as a consequence of participating in the May 13, 1981 exercise as Director of Emergency services he has some concern about anyone releasing information to the public without proper coordination with those persons responsible for making decisions about protective actions. (Caravalho, Tr. 10,795) Mr. Caravalho testified that he knows of plans to coordinate the release of information to the public through the media center where various PIOs would be present. (Caravalho, Tr. 10,809)

186. While Intervenors' witnesses have identified a number of concerns relating to implementation of the public information program, the Board does not believe that they are significant from the overall standpoint of assuring that an effective program is in place. Accordingly, upon consideration of the record as a whole regarding this contention, the Board finds that there is reasonable assurance that the information and procedures for dissemination of the information to the public within the plume exposure pathway EPZ on a periodic basis on how the public will be notified and what its actions should be in the event of an emergency will comply with the requirements of the Commission's regulations, 10 C.R.R. § 50.47(b)(7).

E. CONTENTION 2.D.

Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3,

Exhibit 4, are conse·ıtive and perhaps unrealistic. This is particularly true for the very unlikely and very severe accidents. Specifically, of the values given in Table 7.3, that for the PWR 1 release category, is currently believed to be too high. This probability has been reduced in recent analyses on other nuclear facilities and the overall dose consequences have been shown to be reduced. Sheltering assumptions were also conservative. People not in the process of evacuation were assumed to go about their normal activities. In an actual emergency, people at risk would either be told to evacuate or seek shelter inside. Also, the calculations presented in the Table 7.4 assume that individuals outside the plume exposure pathway EPZ continue their normal activities for 24 hours, and in some cases for seven days, following an accident. If evacuation were continued beyond the plume exposure pathway EPZ to 30 miles, the consequences of Table 7.4 would be reduced by an order of magnitude. The Staff recommended that the Table not be used for emergency planning purposes due to the degree of conservatism in it. (Rood, Tr. 10,340-341)

189. On the basis of the Staff's testimony regarding the nature of the tables and their application by Dr. Lyon and the appropriateness of the use of those tables for emergency planning purposes, the Board sustained a motion to strike the testimony of Dr. Lyon raised by both Applicants and NRC Staff. The Board concluded that the record demonstrated that the line of reasoning pursued by Dr. Lyon in traveling from Table 7.3 to Table 7.4 was impermissible in that it ignored the basis for and applicability of the numbers of Table 7.4 and attempted to draw conclusions that could not be supported. (Tr. 10,715-717)

190. In determining the proposed scope of this issue, the Board considered the testimony of the NRC Staff and Applicants' witnesses to be persuasive. Mr. B. K. Grimes, the NRC's Director of Emergency Planning and Preparedness, Co-Chairman of the FEMA/NRC Steering Committee which developed NUREG-0654 and Co-Chairman of the Task Force which prepared NUREG-0396 (Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants) in December 1978, testified that special pre-arrangement of medical services for the general public were not contemplated or required by NUREG-0654. Rather, the planning standard calling for arrangements for contaminated injured individuals requires special medical arrangements to be in place to deal with onsite emergency personnel who may be injured and contaminated in the course of working at SONGS 2 and 3. Of course, these arrangements would be available to offsite personnel, including members of the general public, to the extent required. (Grimes, Tr. 11,007-008; 11,059-060) Staff witness J. Sears supported that view. (Sears, Tr. 10,709; 10,720)

191. The Board would note that NUREG-0396 at page 15 explicitly states that "No special radiological medical provisions for the general public" (emphasis in original) are contemplated within the planning basis. This planning basis was explicitly adopted by the Commission in the NRC Policy Statement of October 23, 1979 (44 Fed. Reg. 61123) "Planning Basis for Emergency Responses to Nuclear Power Reactor Accidents" wherein the Commission concurred in and endorsed for use the guidance contained in NUREG-0396.

192. The testimony of Applicants' witness Dr. R. E. Linnemann was consistent with the NRC Staff position and the Commission's Statement of Policy. Dr. Linnemann discussed the nature of the hazard potentially presented by a radiological emergency. Dr. Linnemann distinguished radiation exposure and contamination. The only way in which an offsite population can be affected by an accident is through overexposure to radiation. The characteristics of a release of radiation from an accident at a nuclear power plant and the characteristics of radiation itself mitigate against the possibility that a member of the general public offsite would receive a sufficient dose of radiation resulting in symptoms of radiation sickness, much less a dose requiring hospitalization. (Linnemann Testimony, pp. 6-13)

193. An incident at SONGS 2 and 3 could produce large numbers of people who would be slightly contaminated and slightly exposed to radiation. To the extent monitoring of individuals for contamination is desirable, it does not need to be and should not be done at hospitals. It can be done at the predetermined reception centers. The local emergency plans now call for monitoring to be done in this manner. (Id.) If decontamination is required, it is a simple process not requiring hospitalization unless accompanied by traumatic injury. (Linnemann, Tr. 10,822; M. F. Reed, Tr. 1026)

194. Arrangements for the treatment of the general public could be made on an ad hoc basis using the basic structure and training in place for treatment of onsite personnel and emergency workers. (Linnemann, Testimony, pp. 32-33; Tr. 7746-7748, 10,824-10,826, 10,830-10,831, 10,843-10,848)

195. The Board's interest in this question stimulated a request to Counsel representing FEMA for that agency's view on the proper scope of arrangements for contaminated and injured individuals. By letter of October 15, 1981 from Marshall E. Sanders, Acting Chief, Technological Hazards Division, Office of Natural and Technological Hazards, to this Board, FEMA discussed this matter. (Board Exhibit 2) FEMA believes that special arrangements for medical services need to be made for persons within the plume exposure pathway EPZ who may suffer from radiation exposure, radiological contamination or both. No specific considerations, however, are provided for a Class 9 accident. If such an accident occurred and if the accident resulted in a large number of persons being contaminated by excessive levels of radiation, state and local governments would have to rely upon identified medical support organizations in an area beyond the EPZs for the plant where the accident occurred and even other states with facilities that have the required capabilites and resources. By its Order of October 22, 1981, the Board entered the FEMA response into the record and provided an opportunity for the parties to comment on the FEMA response.

196. The NRC Staff commented by letter of November 16, 1981. (Board Exhibit 3) Mr. Grimes of the Staff agreed with the FEMA conclusion with respect to the need for medical facilities for the general public for very large accidents. The Staff went on to explain that, while no special arrangements for medical services for the general public are needed for large accidents, planning should assure the availability of an integrated emergency medical services system and a

public health emergency plan serving the area in which the facility is located. (See NUREG-0654, p. 69, n. 1)

197. The Staff also discussed each of the criteria to which FEMA had made reference in its letter of October 15, 1981, and concluded that none called for special pre-planning of medical services for the general public.

198. By letter of November 19, 1981, Counsel for FEMA informed the Board that the comments of Mr. Grimes correctly reflected the intent of the October 15, 1981 letter. (Board Exhibit 5)

199. Applicants also commented with respect to FEMA's position on the medical services issue by letter of November 16, 1981. Applicants construed the FEMA response much as the Staff did, i.e., no special pre-arrangements need be made what is called for by NUREG-0654. (Board Exhibit 4)

200. Based on the evidence of record, the developmental documents resulting in the Commission's regulation on this subject, and the comments of FEMA and the other parties, the Board finds that the scope of this issue is properly limited to medical services for individuals contaminated and injured onsite from activities associated with the operation of SONGS 2 and 3.

201. The NRC Staff testified with respect to the aspects of this contention required to be addressed by the Applicants in their Emergency Plan. Mr. Sears testified that the Applicants' emergency procedures described in detail the arrangements which had been made by Applicants for medical services for individuals contaminated and injured onsite. (Sears Testimony of August 6, 1981, p. 7)

202. Arrangements have been made with both the Tri City Community Hospital and the South Coast Community Hospital to provide medical assistance. The Applicants' Emergency Plan includes letters of agreement with local physicians for treating any individual suffering from an injury complicated by radiation contamination as a consequence of activities at SONGS 2 and 3. In addition, Applicants have written agreements with the Scudder Ambulance Company and the Superior Ambulance Company for transporting injured and contaminated personnel. (Id.)

203. Further, the Applicants are providing for training of both onsite and offsite personnel who may be involved with a potentially contaminated and injured person. In the Staff's judgment, the Applicants' arrangements for medical services satisfy the criteria of NUREG-0654, II.L.1, 2 and 4 which are the implementation critiera for 10 C.F.R. 50.47(b)(12). (Id.)

204. Mr. K. Nauman of FEMA provided testimony with respect to the offsite aspects of this contention. Mr. Nauman testifed that he applied the criteria of Standard L of NUREG-0654 to the plans of offsite response organizations. The planning standard of 10 C.F.R. § 50.47(b)(2) was literally met only to a limited extent. (Nauman Testimony of August 24, 1981, p. 9) Nonetheless, while not every plan of each jurisdiction addressed specific medical facilities available, Mr. Nauman felt that capability in this area does exist. The deficiency is not substantial and additional documentary evidence with respect to agreements and training would remedy the deficiency. (Nauman, Tr. 10,544; Tr. 10,926-928)

205. Applicants also presented testimony on this issue. Dr. J. E. Hauck described the Applicants' arrangements for local and backup hospital and medical services and the arrangements for transporting victims of radiological accidents to the medical support facilities. Dr. Hauck testified as to the first aid capability at SONGS 2 and 3, the medical facilities at SONGS 2 and 3 for testing patients for injuries and diseases as well as for initial decontamination, the training being provided to personnel at SONGS 2 and 3, including the handling of injured persons who may be contaminated, and the provisions for evaluation of radiation exposure, uptake and treatment. (Hauck Testimony, pp. 4-5)

206. Dr. Hauck outlined the arrangements for transportation of patients from SONGS 2 and 3 to local treatment facilites, and testified that the Applicants have contracted with two hospitals in the vicinty of SONGS 2 and 3 to provide medical facilities for treatment of personnel, particularly emergency medical treatment for individuals suffering from injuries complicated by radiation contamination or excessive radiation as a consequence of activities at SONGS 2 and 3. These agreements are with the South Coast Medical Center and the Tri City Hospital. The Applicants are currently negotiating an agreement with San Clemente General Hospital. The Applicants also have agreements with two ambulance companies and three medical doctors. (Hauck, pp. 5-7)

207. Dr. Hauck additionally testifed that Applicants are participants in the Emergency Medical Assistance Program (EMAP) provided by the Radiation Management Corporation. This program will provide for continuing training, inspection of equipment and supplies, and drills for

the levels of medical support to be available at SONGS 2 and 3 and at the support hospitals and ambulance companies. (Id.)

208. The EMAP is described in some detail in the testimony of Dr. Linnemann. In addition, Dr. Linnemann outlined the training conducted and to be conducted by the Radiation Management Corporation for both offsite and onsite personnel in the medical services area. Training was directed to physicians and hospital emergency room personnel, ambulance personnel, and those responsible for first line rescue of radiation accident victims, among others. (Linneman Testimony, pp. 15-26) Training in the future will be continued as part of EMAP. (Id.)

209. The Board concludes, with the exception noted below, that there is substantial evidence of record as to the adequacy of arrangements for medical services for injured and contaminated individuals. The Board would note that Intervenors presented no testimony within the scope of the issue as finally determined by the Board. The Board has examined the record to see if any significant element relating to the provision of medical services for contaminated and injured individuals requires further consideration and we concur with Mr. Nauman of FEMA with respect to the deficiencies he has identified. (See Finding 204 above) These remaining matters should be resolved prior to full power operation.

210. Nevertheless, based on our consideration of the evidence with respect to this contention, the Board finds that there is reasonable assurance that the arrangements for medical services for contaminated and

injured individuals will comply with the Commission's regulations, 10 C.F.R. § 50.47(b)(12). (See Findings 348 to 351)

F. CONTENTION 2.E

Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will compily with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:

* * *

E. necessary transportation and communication equipment, and the operation of emergency operations centers of the principal response organizations, 10 C.F.R. § 50.47(b)(8);

211. Under § 50.47(b)(8), adequate emergency facilities and equipment to support the emergency response are to be provided and maintained. The contention framed with respect to this planning standard questioned the adequacy of the transportation and communication equipment and the emergency operations centers (EOCs) needed to implement the standard.

212. The NRC Staff examined the Applicants' provisions to provide transportation and communications equipment during an emergency and to establish EOCs. The communication systems available to Applicants for emergency use, their location and their functions are described in Procedure 1.26 entitled "Communications." (Sears Testimony of August 20, 1981, p. 10)

213. The Applicants' transportation equipment includes a fleet of aircraft consisting of five helicopters and one twin-engine, fixed-wing aircraft capable of carrying six passengers based at the Chino Airport. Provisions have been made for the dedicated use of two helicopters for

the transport of emergency personnel and equipment to SONGS 2 and 3. However, all aircraft could be dedicated to SONGS 2 and 3 if necessary. Applicants also own an extensive fleet of ground transportation vehicles. (Id., pp. 9-10)

214. Section 7 of the Applicants' Emergency Plan (Applicants' Exhibit 51) describes the emergency facilities, the Station Control Room, the Technical Support Center and the Operation Support Center for SONGS 2 and 3. Also described are the interim arrangements for the EOF which will include an onsite emergency support center and a primary emergency operation center located in the San Clemente City Hall. (Id.)

215. The Applicants' provisions for emergency operation centers and their commitment of transportation and communication equipment satisfies the criteria of NUREG-0654, II.F and H which are the implementation criteria for 10 C.F.R. § 50.47(b)(8). Implementation capability was demonstrated during the full-scale exercise involving the Applicants conducted on May 13, 1981 to the extent that the procedures and systems employed during the Unit 1 exercise were similar to those in place for Units 2 and 3. (Id., p. 11)

216. Mr. K. Nauman of FEMA testified with respect to this contention. Emergency operating centers and the transportation and communications assets of the two counties and two cities, the U.S. Marine Corps and the State and Federal organizations are available to support an emergency. Orange and San Diego Counties have established and operational EOCs with required emergency response plans and equipment to respond. (Nauman Testimony of August 24, 1981, pp. 9-10)

217. Consequently, in Mr. Nauman's opinion, adequacy has been established and operational EOCs do exist with the required emergency response plans as well as adequate transportation and communications. (Nauman, Tr. 10,928)

218. Applicants also presented testimony on this issue. Mr. H. Ray described procedures to be followed to ensure proper notification of appropriate personnel both onsite and offsite in the event of an emergency at SONGS 2 and 3. Mr. Ray described the various communications systems. The various means available to SONGS 2 and 3 for notifying Federal, State and local response organizations are described in Section 7.5 and Tables 7-1 and 7-2 of the Applicants' Emergency Plan. (Applicants' Exhibit 51) The communications systems included multiple systems and redundancies which ensure the performance of vital functions in transmitting and receiving information between SONGS 2 and 3 and involved Federal, State and local response organizations throughout the course of an emergency. These systems include a regular public telephone system, a dedicated public telephone system (the Interagency Telephone System [ITS] or yellow phone), VHF radio system to Camp Pendleton, UHF radio system to the Pendleton Coast Office of the State Department of Parks and Recreation and a microwave multiplex system to the Southern California Edison Energy Control Center and the San Diego Gas & Electric Company Energy Control Center (PAX System). These systems can be energized with backup power sources to minimize the risk of total communication loss from localized events. (Ray Testimony, pp. 22-30)

219. Mr. D. Pilmer also addressed the substance of this contention in his testimony before the Board. Mr. Pilmer described the

communications equipment and procedures to provide for prompt notification of offsite response organizations. The primary means for conducting such prompt notification is through use of a special telephone circuit which was specifically engineered for this purpose. This is the ITS or yellow phone system referred to in the testimony of Mr. Ray above. It is a dial-up party line telephone network connecting seven local and State government agencies with SONGS 2 and 3 and the interim EOF. The system provides 24 hour per day communication capability. (Pilmer Testimony, pp. 19-21)

220. Mr. Pilmer also described the existing emergency facilities established for use in an emergency response. These emergency facilities consist of the Emergency Support Center and the Technical Support Center on the SONGS site, the interim EOF located in the San Clemente City Hall, the Emergency Media Center located in the San Clemente Boys and Girls Club and the Southern California Edison General Office in Rosemead, California. From the vantage point of the Emergency Support Center, all onsite and offsite emergency response activities are monitored and action is initiated as required. (Pilmer Testimony, pp. 23-24)

221. Finally, E. Murri of NUS testified on behalf of Applicants with respect to this issue. Mr. Murri considers principal response organizations, as that term is used in the Commission's regulations, to include, with respect to SONGS 2 and 3, Orange County, San Diego County, the City of San Clemente, the State Department of Parks and Recreation--Pendleton Coast Office, and the U.S. Marine Corps--Camp Pendleton. Mr. Murri does not consider either the Capistrano Unified School District or the City of San Juan Capistrano as a principal

response organization. Mr. Murri based his considerations upon the fact that the Capistrano Unified School District principally relies on the emergency response resources of Orange County and the City of San Clemente, and that the City of San Juan Capistrano principally relies on the emergency response resources of Orange County. In the opinion of Mr. Murri, while both the Capistrano Unified School District and the City of San Juan Capistrano have sufficient plans and implementing procedures and have or have access to sufficient equipment and personnel to adequately perform their assigned tasks and responsibilities, given their limited role in an overall response, they are not principal response organizations. (Murri Testimony, pp. 68-69)

222. In Mr. Murri's opinion, the principal response organizations did have the capability to respond to an emergency at SONGS 2 and 3 and this capability had been demonstrated during the May 13, 1981 exercise. Mr. Murri concluded that each of these organizations function on a 24 hour per day basis and respond to emergency conditions frequently enough to assure an ongoing preparedness effort. Furthermore, each of these organizations has sufficient equipment and personnel as well as access to additional equipment and personnel from larger Federal, State and local jurisdictions of which they are a part or with which they have mutual aid agreements. (Murri Testimony, pp. 70-71)

223. Mr. Murri also described the primary function of an EOC to be a single location where the principal response organization may effectively manage and deploy the equipment and personnel of the jurisdiction which it represents; request, receive, coordinate and dispatch all information, equipment and personnel from all other

responding jurisdictions; control rumors; and communicate necessary public information. Mr. Murri determined that each of the principal response organizations operates an EOC and that, in addition, the City of San Juan Capistrano, the State OES, the CHP and the CALTRANS operate EOCs. Each of the EOCs are equipped with reliable communications systems tying them together. Mr. Murri concluded that each of the principal response organizations has or has access to transportation and communications equipment necessary for performing emergency response functions. (Murri Testimony, pp. 71-75)

224. In addition, representatives of the various principal response organizations, and other organizations called upon to function in the event of a radiological emergency at SONGS 2 and 3, appeared as subpoenaed witnesses called by Applicants. These witnesses identified the capabilities of the organizations which they represented and specifically addressed the operation of their EOCs and the transportation and communication equipment available to them to assist in an emergency response. See Killingsworth (CHP), Tr. 8269, et seq.; Roper (CALTRANS), Tr. 8332, et seq.; Stowe (State Parks), Tr. 8491, et seq.; Coleman (San Clemente), Tr. 8586, et seq.; Ferguson (San Juan Capistrano), Tr. 8691, et seq.; Poorman (Orange County), Tr. 8753, et seq.; Swanson (Capistrano Unified School District), Tr. 8791, et seq.; Turner (Orange County), Tr. 8907, et seq.; Hunt (San Diego County), Tr. 9268; Wallace (Marine Corps), Tr. 9329, et seq. and Findings ___ to ___ above of this Initial Decision.

225. In addition, Mr. Mecham and Mr. Caravalho appeared as witnesses subpoenaed by Intervenors and described their concerns with respect to the operation of the San Clemente EOC, and the transportation

and communications capabilities to support that EOC, based upon the results of the May 13, 1981 exercise. Generally, both individuals perceived a need for improved decision-making, some improvement in visual aids and improvement in communications. (Mecham, Tr. 10052, et seq.; Caravalho, Tr. 10800, et seq.) While these concerns flowed from the use of the San Clemente City Hall as a combined EOC/interim EOF and some of these concerns more properly focus on the operation of the interim EOF rather than the operation of the San Clemente EOC, the Board would note that substantial efforts have been undertaken to separate the San Clemente EOC from the interim EOF and to enhance communications and communications discipline. Furthermore, as we have previously discussed, these matters are subsumed by deficiencies noted by FEMA and are being resolved through the Applicants' program of corrective action.

226. The Board finds that the weight of the evidence on this issue clearly supports a finding that the principal response organizations, as well as other support organizations called upon to assist in an emergency, do have the capability to initiate the operation of an EOC and to maintain its operation on a continuous level during an emergency. In addition, the communication and transportation equipment available to respond to a radiological emergency at SONGS 2 and 3 is extensive and, in the Board's view, capable of performing the functions called for during an emergency. The Board is persuaded by the testimony of the Applicants, and the extensive testimony of knowledgeable personnel from the various offsite organizations who appeared before it. The Board would also note that both Mr. Sears of the NRC Staff and Mr. Nauman of FEMA testified

that both the Applicants and the offsite response organizations had met the regulatory requirements in this area and consequently that emergency preparedness was adequate. Consequently, the Board finds that there is reasonable assurance that the transportation and communication equipment and the emergency operations centers comply with the Commission's regulations, 10 C.F.R. § 50.47(b)(8)

G. CONTENTION 2.F.

Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:

* * *

F. the capability of each principal response organization to respond and to augment this initial response on a continuous basis, 10 C.F.R. § 50.47(b)(1,;

227. Mr. John R. Sears, the witness for the NRC Staff, presented testimony which addressed Applicants' provisions to respond to an emergency and to augment any initial response on a continuous basis. (Sears Testimony of August 6, 1981, pp. 8-9, Tr. 10,741-43) Mr. Sears testified that Section 5 of Applicants' Emergency Plan describes in detail the onsite emergency organization and its augmentation and extension offsite. (Sears Testimony of August 6, 1981, p. 8) The Applicants' Watch Engineer is initially designated as the Site Emergency Coordinator who has the responsibility when an abnormal situation arises to determine the classification of the situation and to implement the Emergency Plan. (Id.) There is continuous 24-hour communication capability between SONGS 2 and 3 and Federal, State and local response

organizations to ensure rapid transmittal of accurate notification information and data assessing the emergency. (Id.) The Applicants' Site Emergency Coordinator has the authority to declare the emergency and to make the necessary notifications and recommendations to offsite response authorities. (Id.) Telephone calls would be made from the control room immediately upon declaration of an emergency. (Sears, Tr. 10,741)

228. Station staff emergency assignments have been made. (Sears Testimony of August 6, 1981, p. 8) The Applicants have made a complete survey of all its personnel on the operation staff to determine the time involved in getting to the plant from their residences. (Sears Tr. 10,741) On that basis, the Applicants would be able to augment its staff to handle the emergency. (Id.) Call-out for augmentation of on-shift personnel capabilities would be made immediately upon declaration of the emergency. (Sears Testimony of August 6, 1981, p. 8) The Applicants' operation staff has pagers which cover a particular area. When a member of the staff leaves that area, the person informs the rest of the staff so that an alternate is made available. (Id.)

229. Mr. Sears testified that the Applicants' staff on duty at the reactor is adequate to handle the initial response in the event of an emergency. (Sears, Tr. 10,742) For accident conditions, the Applicants have sufficient personnel so that no one would need to work more than an eight hour shift. (Sears, Tr. 10,743) Furthermore, Mr. Sears testified that the Applicants are able to comply with the guidance contained in Table B-1 of NUREG-0654 concerning augmentation of the initial response. (Sears Testimony of August 6, 1981, pp. 8-9, Tr. 10,742) The Staff

concluded that the Applicants' capability to respond to an emergency and to augment this initial response on a continuous basis meets the standard of 10 C.F.R. § 50.47(b)(1). (Sears Testimony of August 6, 1981, p. 9, Tr. 10,742)

230. Mr. Kenneth W. Nauman, Jr., of FEMA presented testimony relevant to this contention. Mr. Nauman testified that he examined the capability of the principal offsite response organizations to respond to an emergency and to augment any initial response on a continuous basis. (Nauman Testimony of August 24, 1981, p. 10) The capability of the principal offsite response organizations to respond was demonstrated through past performance in responding to disaster and through the organizations planning which is oriented to principles of mutual aid and redundant staffing. (Id.) Mr. Nauman testified that the State mutual aid agreement, the State response capability and Federal assistance could be provided as support for the response of local offsite jurisdictions to a radiological emergency at SONGS 2 and 3. (Nauman, Tr. 10,928) Mr. Nauman also testified that the basic planning of the offsite jurisdictions, coupled with the State and local mutual aid agreements, and Federal support through the FEMA organization provide the necessary response capability. (Nauman Testimony of August 6, 1981, p. 10) Mr. Nauman concluded that the capability of each principal offsite response organization to respond to a radiological emergency at SONGS 2 and 3 and to augment this initial response on a continuous basis meet the planning standard of 10 C.F.R. § 50.47(b)(1). (Id.)

231. The Applicants provided testimony relevant to this contention. Mr. Harold B. Ray, Station Manager of SONGS Units 1, 2 and 3, described

who is primarily responsible for the organization and direction of personnel at SONGS 2 and 3 in the event of an emergency. (Ray Testimony, p. 4) Mr. Ray stated that a written emergency plan currently exists for SONGS 2 and 3, and that it is kept available with an up-to-date set of offsite emergency response plans and an offsite evacuation procedure in the Control Room and the Technical Support Center of SONGS 2 and 3. (Id.) Mr. Ray testified that the Emergency Plan for SONGS 2 and 3 describes the organizational control of emergencies, and the Plan designates staffing to respond to an emergency and to augment this response on a continuous basis. (Ray Testimony, p. 5)

232. Mr. Ray described the setup for the emergency response organization of SONGS 2 and 3, and the authority, duties, and responsibilities of the Emergency Coordinator. There is an Emergency Coordinator on duty at all times. (Ray Testimony, pp. 7-8, 9) Mr. Ray also described the line of succession for the Emergency Coordinator who is in charge of the emergency response. (Ray Testimony, p. 9) All responsibilities of the Emergency Coordinator may not be delegated to other elements of the emergency organization. (Ray Testimony, p. 10) Mr. Ray has identified by position or title the major tasks to be performed by personnel assigned to functional areas of emergency response. (Id.)

233. Mr. Ray specifically described the means to augment onsite technical support in the event of an emergency at SONGS 2 and 3, including the specific organizations that could provide additional technical support. (Ray Testimony, pp. 11-13)

234. Mr. Ray indicated that the Emergency Plan for SONGS 2 and 3 specifies the interfaces among the various response organizations, and it specifies the local individuals or organizations which may be requested to provide onsite emergency assistance. (Ray Testimony, pp. 14-15)

235. The Applicants have identified and obtained written agreements for the offsite services to be provided by participating governmental and private agencies for handling emergencies. (Ray Testimony, p. 15)

236. Mr. Ernest L Murri, a consultant to Applicants, testified on their behalf. Mr. Murri stated that he reviewed the response planning and plan implementation capability of each principal response organization. (Murri Testimony, p. 68) The principal response organizations are:

(1) The Unified San Diego County, Office of Disaster Preparedness;

(2) The U.S. Marine Corp--Camp Pendleton;

(3) The State Department of Parks and Recreation (Pendleton Coast Office);

(4) The City of San Clemente; and

(5) The Orange County General Services Agency, Division of Emergency Services. (Murri Testimony, p. 69)

The Capistrano Unified School District and the City of San Juan Capistrano are not each a "principal response organization." (Murri Testimony, pp. 69-70)

237. Mr. Murri describes the various factors resulting in his conclusion that the principal response organizations have the capability to respond and augment that response on a continuous basis. (Murri

Testimony, pp. 70-71) Those factors include the provisions in the various plans of these organizations, the demonstration of the capability during the May 13, 1981 exercise, the organizations frequent response to other emergencies, the sufficient personnel and equipment and access to additional equipment and personnel from other jurisdictions including Federal. (Id.)

238. Mr. Jack P. Stowe, Area Manager of the Pendleton Coast Area, State Department of Parks and Recreation testified that State Parks has worked with the other various response organizations and State Parks has the ability to coordinate its activities with those various response organizations. (Stowe, Tr. 8501) State Parks has a radiological emergency response plan which has not been finally approved; however, the plan would be used in the event of an emergency. (Stowe, Tr. 8489-90) State Parks would have a representative at the EOF in San Clemente in the event of an emergency at SONGS 2 and 3. (Id.) Mr. Stowe testified that State Parks has the ability to call on other agencies to supply additional equipment or personnel if it were necessary. (Stowe, Tr. 8501-02) Mr. Stowe testified that State Parks has established procedures for calling in additional State Parks' personnel who are not on duty. (Stowe, Tr. 8502) During an emergency, State Parks has inventories of equipment available for use. (Id.) State Parks has sufficient personnel to accomplish its primary goal of evacuating the beach area in the event of an emergency. (Id.)

239. Mr. Ronald J. Coleman, Director of Fire Protection and Deputy Director of Emergency Services, City of San Clemente, testified that the total resources of the City of San Clemente became part of the emergency

services organization under California law. (Coleman, Tr. 8568) As a signatory to the California Master Mutual Aid Act, the total resources of Orange County would be available to assist the City of San Clemente in the event of an emergency. (Coleman, Tr. 8569) Mr. Coleman explained the mutual aid relationships that the emergency response organization in the City of San Clemente can call on in an emergency. (Id.) Mr. Coleman described how the City's established communications network interfaces with the communications networks established by the other response agencies that the City would participate with in an emergency response. (Coleman, Tr. 8591-92)

240. Ms. Cynthia S. Ferguson, Administrative Assistant to the Director of Public Works of the City of San Juan Capistrano, testified that the primary function of the City's emergency response organization is notification to the public and coordinating communications among the sheriff and fire departments. (Ferguson, Tr. 8684) Ms. Ferguson testified that the City primarily relies on Orange County for its services in the event of an emergency. (Ferguson, Tr. 8684, 8686)

241. Ms. Jill M. Swanson, Safety/Energy Coordinator for the Capistrano Unified School District, testified that the City of San Clemente and the County of Orange would be relied on to provide emergency services to the School District. (Swanson, Tr. 8792-93) The School District has a policy which describes that is to be done in the event of a radiological emergency at SONGS 2 and 3. (Swanson, Tr. 8800) Ms. Swanson described who is responsible for deciding whether to evacuate the school District in the event of an incident at SONGS 2 and 3. (Swanson, Tr. 8812)

242. Mr. Egbert S. Turner, Manager of the Emergency Management Division, General Services Agency, County of Orange, testified that there are procedures for providing transportation and personnel for the purpose of evacuating schools in the Capistrano Unified School District if that became necessary. (Turner, Tr. 9807) The County of Orange has adopted a radiological emergency response plan for SONGS 2 and 3. (Turner, 8901-02) Mr. Turner testified that there are SOPs which cover the functions involved in responding to an incident at SONGS 2 and 3. (Turner, Tr. 8903)

243. Ms. Barbara Fox, Assistant Director, General Services Agency, County of Orange, testified that general emergency exercises involving all executive management personnel and their staff have been conducted for the past 4 or 5 years. (Fox, Tr. 9028) Ms. Fox identified the various arrangements that Orange County has with jurisdictions for the purpose of providing or receiving services. (Fox, Tr. 9028-30) The City of San Juan Capistrano has public safety emergency personnel available to it on a 24-hour per day basis. (Fox, Tr. 9034, 9046-47, Applicants Exhibit 141) Ms. Fox describes who is responsible for making protective action decisions within the County of Orange. (Fox, Tr. 9046) Ms. Fox identifies the types of backup services the State of California would provide to Orange County. (Fox, Tr. 9057-58)

244. Mr. James W. Hunt, Director, Office of Disaster Preparedness, County of San Diego, described how the County's emergency response organization coordinates the activities of all response agencies in the event of an emergency. (Hunt, Tr. 9255-56) Mr. Hunt also describes access to resources in the County and identifies the arrangements for

requesting services, including mutual aid. (Hunt, Tr. 9256, 9297) The County of San Diego has prepared an offsite radiological emergency response plan. (Hunt, Tr. 9260) SOPs have been developed to implement the County's radiological emergency plan. (Hunt, Tr. 9261-62) Mr. Hunt describes who is responsible for assuring the County's capability to respond and augment the County's initial response. (Hunt, Tr. 9267) The Interagency Agreement and Evacuation Procedure (IAEP) serves as a coordinating document among all the local response organizations. (Hunt, Tr. 9262)

245. Lt. Col. Jack E. Wallace, Operations/Plans/Budget Officer in the Office of the Assistant Chief of Staff, Operations and Training, Marine Corps Base, Camp Pendleton, California, testified that the EOC is capable of operating 24 hours a day for as long as necessary. (Wallace, Tr. 9332) The Commander General at the Marine Corps Base is in charge of the emergency organization (Wallace, Tr. 9340), and has the ability to commit the Corps at Camp Pendleton to help the civilian population in the event of a life-threatening situation. (Wallace, Tr. 9343)

246. The Findings for Contention 2.A, numbered 93, 94, 96, 100, 102, 104, 105, 108-111, 119, 120, supra, are adopted for Contention 2.F to the extent they address the capability for 24-hour per day notification of emergency response organizations and 24-hour per day manning of communication links.

247. The Intervenors subpoenaed witnesses who provided testimony concerning this contention. Ms. Jan Goodwin, General Chairman of the United Transportation Union. Local 19, testified that she does not know

of a means other than by telephone for reaching bus drivers of the Orange County Transit District at night. (Goodwin, Tr. 9914-15)

248. Mr. William Mecham, a San Clemente City Councilman, testifying in a non-official capacity, stated his general belief that the current state of emergency planning in the City of San Clemente is not adequate to protect the public in the event of a radiological emergency at SONGS 2 and 3. (Mecham, Tr. 10,057)

249. We find that Ms. Goodwin's concerns are not significant from the standpoint of the adequacy of this contention and that Mr. Mecham's generalized position does not detract from our ability to favorably resolve this contention. Consequently, the Board finds that there is reasonable assurance that each principal response organization has the capability to respond and to augment this initial response on a continuous basis and complies with the Commission's regulations, 10 C.F.R. § 50.47(b)(1).

H. CONTENTION 2.G

> Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:
>
> * * *
>
> G. radiological emergency response training to those who may be called on to assist in an emergency, 10 C.F.R. § 50.47(b)(15);

250. Mr. John R. Sears was the witness for the NRC Staff regarding this contention. Mr. Sears testified that he examined the radiological emergency response training provided by Applicants to those who may be

called on to assist in an emergency. (Sears Testimony of August 6, 1981, p. 9) In Table 8-1 of the Applicants' Emergency Plan, the Applicants identify the personnel involved in training and the requirements for both initial and periodic retraining. (Id.) This training will involve the scope, responsibilities and functioning of the Applicants' Emergency Plan and emergency implementing procedures with specific instruction on those areas which apply to the particular person's responsibility. (Id.) Mr. Sears testified that these areas of training include emergency response coordination and direction, accident assessment, radiological monitoring, repair and damage control, rescue and first aid. (Id.) The initial training on the Emergency Plan is in progress and will be completed before fuel loading. (Id., Tr. 10,723) Furthermore, Mr. Sears testified that he is familiar with the training provided through Applicants' support for over 300 personnel from offsite response organizations, including physicians and hospital emergency room personnel, ambulance personnel, police and firemen. (Sears Testimony of August 6, 1981, p. 10) The Staff concluded that the radiological emergency response training provided by Applicants to those who may be called on to assist in an emergency satisfies the criteria of NUREG-0654, II.O, and meets the planning standard of 10 C.F.R. § 50.47(b)(15). (Id.)

251. Mr. Kenneth Nauman, Jr., of FEMA presented testimony addressing this contention as it relates to the radiological emergency response training provided to offsite response personnel who may be called on to assist in an emergency. (Nauman Testimony of August 24, 1981, p. 11, Tr. 10,449-53, 10,457-64, 10,469-70, 10,929-30, 10,932) Mr. Nauman testified that the local response organizations have

identified personnel who have had training given by the State, and training provided by County offices. (Nauman Testimony of August 24, 1981, p. 11) The Applicants have provided medical radiological training. (Id.) Mr. Nauman testified, however, that the training provided to offsite response personnel is limited and additional training is needed. (Id.) The additional training is needed to improve the proficiency and expand on techniques of nuclear power plant field monitoring. (Id.) Furthermore, Mr. Nauman testified that all participants need training in basic concepts of radiation. (Id.) Training plans and procedures are being developed. (Id.)

252. The radiological response capability of offsite response organizations has been primarily developed with an orientation to issues concerning wartime nuclear attack. (Nauman, Tr. 10,450) That does provide some fundamental ability to handle radiological issues; however, that capability falls short of what is needed for the technical response issues involved in monitoring offsite releases for a nuclear power plant. (Id.) Mr. Nauman describes the areas where training is needed for the radiological monitoring involved with nuclear power plants. (Nauman, Tr. 10,450-51) Although the training outlined in the plans of the offsite response organizations submitted to Mr. Nauman was sufficient to meet the minimum standards of NUREG-0654 (Nauman, Tr. 40,470), Mr. Nauman concluded that the radiological emergency response training that has been provided to offsite response personnel who may be called on to assist in an emergency does not meet the planning standard of 10 C.F.R. § 50.47(b)(15). (Nauman Testimony of August 6, 1981, p. 11, Tr. 10,462-63, 10,930-32)

253. The Applicants also presented testimony on this issue. Mr. James L. Willis testified that he was the individual responsible for the definition, development, scheduling and conduct of onsite training associated with the operation, maintenance and emergency preparedness at SONGS 2 and 3. Part of this responsibility includes training of nuclear generating station personnel to support emergency preparedness. (Willis Testimony, pp. 2-10) Mr. Willis stated that the persons responsible for the direction and coordination of emergency response actions have had specific training with respect to the SONGS 2 and 3 emergency plan including its implementing procedures. It also includes familiarization with equipment and procedures for communications between the various organizations and agencies involved in an emergency response. Personnel directly involved in assessment of possible accidents have had extensive nuclear power plant experience and training. Emergency teams such as monitoring teams and sampling teams have had specific instruction on procedures and methods required to execute their assignments during emergencies. (Id.) Elements of the training program for SONGS 2 and 3 are set forth in training memoranda. (Applicants' Exhibits 62 through 55) Mr. Willis discussed the extent of initial training in support of the SONGS 2 and 3 emergency plan and indicated that this initial training will be completed prior to loading fuel in Unit 2. (Willis Testimony, p. 8)

254. Dr. Roger E. Linnemann also addressed the subject of training. Dr. Linnemann is President of Radiation Management Corporation (RMC). RMC was requested by Applicants to conduct a training program for offsite personnel from various agencies and firms located in Orange and San Diego

Counties who might be called upon to assist in an emergency response to an accident at SONGS 2 and 3. (Linnemann Testimony, p. 3-4) Dr. Linnemann detailed the specific agencies and the number of individuals who were provided with training and the time frames involved. The objectives of the training seminars included providing specific training concerning notification, response requirements and specific responsibilities and/or procedures for each group's area of concern and to initiate situational exercises for refinement of each participant's understanding of the coordination required for response to various types of accidents which might occur at a nuclear facility. (Id., pp. 15-18) In addition, objectives were tailored for each specific audience ranging from physicians and emergency room personnel to security and communication personnel. Provisions have been made for this type of training to be continued for those who have not received the training and for retraining for those who have received it. (Id., pp. 18-26)

255. Mr. Harold B. Ray testified on behalf of Applicants with respect to training for site access in the event of an emergency. Mr. Ray testified that in the event of an emergency which did not involve site evacuation, the access of supporting emergency vehicles or others to the site would be controlled just as in non-emergency conditions. Security personnel would meet the incoming resource and escort it to the location where it may be needed. In the event of an emergency which involved site evacuation, emergency procedures are in place for either the Emergency Coordinator or the administrative support leader to advise security to admit the responding resource and escort it to the point needed. (Tr. 7866-68)

256. Mr. Murri of NUS also testified on behalf of Applicants regarding this issue. Mr. Murri testified that he had reviewed the status of a radiological emergency training of personnel in the involved offsite emergency response organizations who may be called upon to assist in an emergency involving SONGS 2 and 3. He generally found that personnel are trained to respond to large-scale disasters but that additional training in the specifics of a radiological emergency would be desirable. Consequently, at Applicants' request, NUS has developed and made available to all involved offsite emergency response personnel a radiological emergency response training program set out in Applicants' Exhibit 111. A number of individuals including the directors or coordinators of response organizations, personnel responsible for accident assessment, radiological monitoring teams and radiological analysis personnel, police, security and fire fighting personnel, first-aid and rescue personnel and local support services personnel will be provided an opportunity for training and periodic retraining in proper procedures for notification and basic radiation protection and in their expected roles in an emergency response. (Murri Testimony, pp. 75-76)

257. Local witnesses also appeared before this Board and discussed their programs for radiological emergency response training for those who may be called upon to assist in an emergency. Mr. Coleman of the City of San Clemente testified that the majority of his staff had received some radiation training and that the City plans to participate in the radiological training programs to be offered by Applicants. (Coleman, Tr. 8605-06) Both Mr. Turner and Ms. Fox of Orange County believed that adequate training had been provided to County personnel to perform their

functions. (Turner, Tr. 8920; 8923-24; Fox, Tr. 9028) The programs of San Diego County in this area were discussed by Mr. Hunt. (Hunt, Tr. 9275-76)

258. Based on our review of the testimony regarding this contention, we concur with Mr. Nauman's position that Applicants' training program requires improvement. We are also pursuaded that Applicants are presently engaged in significant efforts to resolve this deficiency and the testimony presented adequately defines the scope and substance of the matters to be accomplished. Thus, we conclude that, while this deficiency should be promptly resolved, in light of Applicants' program of corrective action in which FEMA has concurred, we find there is reasonable assurance that radiological emergency response training to those who may be called on to assist in an emergency will comply with the Commission's regulations, 10 C.F.R. § 50.47(b)(15). (See Findings 348 to 351)

I. CONTENTION 2.H

> Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:
>
> * * *
>
> H. the methods, staffing, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the plume exposure pathway EPZ for SONGS 2 and 3, 10 C.F.R. § 50.47(b)(9);

259. Mr. John R. Sears, the witness for the NRC Staff, provided testimony on this contention which addressed the Applicants' methods,

staffing, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological within the plume exposure pathway EPZ for SONGS 2 and 3. (Sears Testimony of August 6, 1981, pp. 10-11, Tr. 10,680-82, 10,684, 10,722, 10,724, 10,726, 10,728, 10,745-47, 11,033) Mr. Sears identified the Applicants' radiological monitoring systems designed to monitor radioactivity levels in all of the important process and effluents points and the equipment available at the station for both initial and continuing assessment of emergency situations. (Sears Testimony of August 6, 1981, p. 10)

260. Mr. Sears testified that the Applicants have designed all of its monitoring systems with the capability of absorbing iodine without interference from the noble gases for the purpose of determining the quantities and concentrations of iodine. (Sears, Tr. 10,681) The Applicants have established an environmental monitoring program with provisions for a ring of dose meters. There are also provisions for approximately 60 TLD stations. (Sears, Tr. 10,746-47) Also, the Applicants are installing high-range monitors which are capable of staying on scale given the worst accident conceivable. (Sears, Tr. 10,680-81)

261. The Applicants are installing a Health Physics computer which will process meteorological data and data from radiation monitors to calculate doses at various distances from the plant. (Sears Testimony of August 6, 1981, at p. 11) This automated system is scheduled to be fully operational by July 1982, and it will be available for connection to principal offsite response organizations. (Id.) Mr. Sears testified that Applicants plan to provide the Health Physics computer with the

capability to account for the affect of the topography surrounding SONGS 2 and 3 on effluents. This computer will calculate the relative concentrations downwind on the basis of a source term at the reactor. (Sears, Tr. 10,681-82)

262. For gathering information on meteorological conditions, the Applicants have a meteorological tower and they are installing a backup meteorology tower. (Sears, Tr. 10,681) Also, the Applicants have made tracer studies of the wind directions from SONGS 2 and 3 which will assist Applicants' meteorologists in predicting the direction of the wind in a given instance based on regional weather, and based on the wind speed and stability class obtained from the meteorological tower. (Sears, Tr. 10,682-83)

263. Mr. Sears testified that Applicants are training the Health Physics Foreman to perform dose assessments. The training is expected to be completed within two weeks. (Sears Testimony of August 6, 1981, p. 11, Tr. 10,745) There are at least two senior Health Physics technical personnel, qualified to perform dose assessments, whose driving time from home to SONGS 2 and 3 is less than 30 minutes. (Sears Testimony of August 6, 1981, p. 11) The Applicants' present procedure for determining dose projections which involves hand calculations is being revised to apply to SONGS 2 and 3. (Id.) Mr. Sears testified that Applicants' dose assessment function is performed onsite in the Technical Support Center with the use of their Health Physics computer. The Applicants have made provisions for a liaison person to assist the offsite response organizations at the Offsite Dose Assessment Center (ODAC) in performing their dose assessments. (Sears, Tr. 10,726) It is

the Applicants' responsibility to ensure that the ODAC receives proper information such as wind speed and direction, and monitor readings. (Sears, Tr. 10,728) Mr. Sears testified that he is familiar with Applicants' radiological monitoring equipment, detailed SOPs and onsite personnel regarding their capability to perform offsite radiological monitoring and dose assessment. (Sears, Tr. 11,033)

264. In the opinion of the Staff, the Applicants' onsite capability to perform offsite dose assessment and radiation monitoring satisfies criteria II.I.8 of NUREG-0654. (Sears, Tr. 11,039) The Staff concluded that Applicants' methods, staffing, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition satisfy the criteria of NUREG-0654, and meet the planning standard of 10 C.F.R. § 50.47(b)(0). (Sears Testimony of August 6, 1981, p. 11)

265. Mr. Kenneth Nauman, Jr., of FEMA presented testimony with respect to this contention. Mr. Nauman testified that he examined the methods, staffing, systems and equipment available to the offsite response organizations for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the plume exposure pathway EPZ with standard II.I of NUREG-0654. (Nauman Testimony of August 24, 1981, p. 12) Mr. Nauman testified that the system and equipment exists in limited quantities, while staffing has been designed to meet plan requirements. (Id., Tr. 10,935) Local response organizations are expanding their methods for assessment and monitoring through the establishment of standard operating procedures. (Nauman Testimony of August 24, 1981, p. 12, Tr. 10,935) Mr. Nauman also

testified that some equipment is presently not on hand which would enhance the response capability of the local jurisdictions. (Id.) There are SOPs being developed to address procedures for response. (Id.) The staffing from local, State and Federal organizations is being refined and training is being developed to improve the response capability of the local jurisdictions. (Nauman Testimony of August 24, 1981, p. 12) Mr. Nauman testified that information he has obtained since the May 13, 1981 exercise increases his confidence in the reponse capability of local jurisdictions. (Nauman, Tr. 10,936). Mr. Nauman concluded that generally the methods, staffing, systems and equipment available to offsite response organizations for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition meet the planning standard of 10 C.F.R. § 50.47(b)(9). (Nauman Testimony of August 4, 1981, p. 12)

266. The Applicants also presented testimony on this issue. Mr. Kenneth P. Barr is currently Manager, Health Physics, for the SONGS site. Mr. Barrs' activities and responsibilities during an emergency have been described above as has his testimony detailing the onsite capability for assessing the radiological significance of any accidental offsite release of radioactivity from SONGS 2 and 3. (See Finding 47 above) The capability for acquiring and evaluating meteorological data under emergency conditions as SONGS 2 and 3 includes a meteorological tower with appropriate instrumentation displaying in the control room and the Technical Support Center. A backup tower is scheduled to be installed by July, 1982 in accordance with NRC requirements. Until that time, backup general area meteorological conditions can be obtained from

the National Wheather Service and San Diego National Airport. (Barr Testimony, p. 6) In the event that projections or onsite monitoring indicates the potential for release of radioactive materials to offsite areas resulting in doses approaching the threshold of the range of PAGS, offsite radiation monitoring teams will be dispatched from SONGS 2 and 3. Mr. Barr described the procedures to be followed by such teams, their equipment, and the means for determining where within the plume exposure pathway EPZ the teams would be deployed. Aerial maps of the plume exposure pathway EPZ will be used to deploy offsite monitoring teams to any specific location. These maps will be available prior to fuel load of SONGS 2. (Id., pp. 11-15) In addition, the Applicants have made arrangements to augment the onsite SONGS emergency response capability in the area of radiation and dose assessment. A mutual assistance agreement exists between SONGS, Pacific Gas and Electric Company and Sacramento Municipal Utilities District and provides for additional trained personnel and equipment for offsite radiation monitoring or dose assessment. In addition, Applicants have an agreement with Environmental Analyses Laboratories to provide a radiological accounting equipment in support of routine operations. Finally, an agreement exists between Southern California Edison and General Atomics for the analyses of emergency samples by General Atomics at their offices in San Diego, California. Mr. Barr concluded that Southern California Edison had a sufficient staff of trained dose assessment and radiation monitoring personnel to adequately accomplish all the necessary offsite or radiological dose assessment and protective action recommendation functions. (Id., p. 16)

267. Mr. David Pilmer also testified with respect to this issue. Mr. Pilmer testified that the Southern California Edison onsite emergency response organization has a complete capability for performing the functions required by 10 C.F.R. § 50.47(b)(9). In addition to this capability, the ODAC will be set up at the EOF following a declared site emergency or general emergency. The ODAC functions as the technical offsite center for the coordination of radiological and environmental assessments. It is staffed with a coordinator who is a Health Physicist from the Orange County Department of Health Services and additional Health Physicist from Southern California Edison, a Southern California meteorologist and other staff required for communications, analytical analysis and maintaining status board displays. The ODAC receives technical data from both onsite and offsite sources on designated communication systems. The ODAC management utilizes the summarized technical data in deploying field survey teams and in making recommendations on protective actions. The ODAC will also function in an advisory capacity in providing technical interpretations in support for the offsite agencies. (Pilmer Testimony, pp. 26-27)

268. Mr. Murri of NUS also testified on behalf of Applicants with respect to this issue. Mr. Murri testified that he had reviewed the general capability of the principal response organizations to monitor and assess the actual offsite consequences of a radiological emergency condition within the plume exposure pathway EPZ for SONGS 2 and 3. In his opinion, Orange and San Diego Counties, the Marine Corps and the City of San Clemente have the capability and resources required for field monitoring within the plume exposure pathway EPZ for SONGS 2 and 3. NUS

has developed a training program for enhancing this capability. (Aplicants Exhibit 111) Mr. Murri was of the view that the capability which exists is further augmented by the additional offsite expertise and assistance available from the State Department of Health Services and the U.S. Department of Energy. (Murri Testimony, pp. 77-78)

269. Local witnesses also appeared before the Board and discussed their capability in this area. Mr. Coleman of the City of San Clemente described the manpower and equipment available to the City in this area. (Coleman, Tr. 8606-08) Mr. Turner of Orange County testified that the County presently has twelve radiation monitoring teams who have been trained and provide the County with the capability it requires in this area. (Turner, Tr. 8919-20). The capabilities of San Diego County in this area were discussed by Mr. Hunt (Hunt, Tr. 9275-76) Col. Wallace of the Marine Corps discussed the Corps' capability. The capability includes helicopter equipment to aid in radiological monitoring. (Wallace, Tr. 9335-38)

270. The evidence of record reflects some deficiencies with respect to this issue. While Mr. Nauman concluded that methods, staffing, systems and equipment are generally available to offsite response organizations, SOPs need to be further developed and additional equipment procured. Nonetheless, the Board finds that there is reasonable assurance that the methods, staffing, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the plume exposure pathway EPZ for SONGS 2 and 3 will comply with the Commission's regulations, 10 C.F.R. § 50.47(b)(9). (See Findings 348 to 351 below)

J. CONTENTION 2.I

Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:

* * *

I. the physical design, communications equipment, and operating procedures for the interim Emergency Operations Facility, 10 C.F.R. § 50.47(b)(3) and § 50.47(b)(8);

271. Under 10 C.F.R. §§ 50.47(b)(3) and (b)(8), arrangements are required to accommodate State and local staff at the licensee's near-site Emergency Operations Facility (EOF) and the EOF itself must be adequate to support the emergency response. To meet these planning standards, Applicants have developed an interim EOF to serve while a permanent EOF is completed. Completion of the final facility is not required prior to licensing. (Staff Exhibit 12, p. 13-2)

272. Both NRC Staff and FEMA witnesses testified with respect to this issue. The Applicants' configuration for the interim EOF calls for a portion of that facility to be located at the site and another portion to be located in the San Clemente City Hall. (Sears Testimony of August 20, 1981, p. 10) For purposes of the May 13, 1981 exercise, the NRC Staff and FEMA divided responsibilities and the NRC Staff assessed the functioning of that portion of the EOF onsite while FEMA assessed the functioning of that portion of the EOF located at the San Clemente City Hall. (Statement of NRC Staff Counsel, Tr. 10,737-738)

273. Mr. J. Sears of the NRC Staff has examined the physical design, communications equipment and operating procedures for the interim

EOF onsite at which he was the NRC Staff observer during the May 13, 1981 exercise. (Sears Testimony of August 20, 1981, pp. 11-12)

274. The criteria for the interim EOF at SONGS 2 and 3 are contained in NRC Staff letters to Applicants of September 27, 1979 and November 9, 1979, which letters are attached to the Applicants' Emergency Plan. (Applicants' Exhibit 51). Mr. Sears has concluded that the Applicants' provisions for the interim EOF satisfy these criteria and consequently the planning standards of 10 C.F.R. § 50.47(b)(3) and (b)(8) are met. (Id.)

275. Mr. K. Nauman of FEMA testified that the facilities of the interim EOF were examined relative to the criteria of NUREG-0654. The design, equipment and procedures of the interim EOF at the San Clemente City Hall are being reviewed and updated as a result of the May 13, 1981 exercise during which they reflected a "shortfall from perceived requirements". (Nauman Testimony of August 24, 1981, p. 13)

276. Mr. Nauman noted that additional work is being accomplished regarding facilities, equipment and procedures as a result of the deficiencies identified on the May 13, 1981 exercise. Mr. Nauman notes that upon completion of these actions, a demonstration should be conducted to allow for verification of facilities and capabilities. (Id.)

277. Mr. Nauman further indicated that corrective action had been addressed and was adequate to warrant a favorable finding with respect to this issue with the exception of a demonstration to allow for verification of facilities and capabilities. (Nauman, Tr. 10,548-552; Tr. 10,936-937)

278. The Applicants also provided testimony in this area. Mr. D. Pilmer described the physical design, communications equipment and operating procedures for the interim EOF. The EOF functions as the center of information for decision-making and coordination of decisions regarding the offsite response to the emergency. Changes in the interim EOF have been made since the May 13, 1981 exercise. The interim EOF has been separated from the San Clemente EOC. New facilities have been obtained to provide approximately 2,000 square feet of working space. The interim EOF is described on Applicants' Exhibit 122A. (Pilmer Testimony, pp. 24-26)

279. Mr. E. Murri of NUS also testified on this subject on behalf of Applicants. Mr. Murri testified that he has reviewed the physical design, communications equipment and emergency operation procedure for the interim EOF and has concluded that that interim EOF is sufficient for the execution and coordination of all onsite and offsite response organization activities related to an emergency involving SONGS 2 and 3 as required by 10 C.F.R. §§ 50.47(b)(3) and (b)(8). (Murri Testimony, p. 78)

280. Two witnesses who appeared under subpoena on behalf of Intervenors also testified on this subject. Dr. M. F. Reed of the State OES testified that, at the time of the May 13, 1981 exercise, she was located in the EOC/EOF complex in the San Clemente City Hall. She concluded that co-locating of the two emergency facilities caused a great deal of confusion and that the EOF was not functioning as called for under NUREG-0696. (Reed, Tr. 10,220) Mr. Caravalho also testified that the May 13, 1981 exercise led to concerns on his part as to the proper

functioning of that portion of the EOF which had been co-located with the San Clemente EOC. (Caravalho, Tr. 10,797)

281. The testimony of both Mr. Caravalho and Dr. Reed relate to concerns identified prior to the corrective action taken by Applicants and described in the testimony of Mr. Pilmer and are subsumed by the deficiencies noted by FEMA. With respect to the offsite portion of the interim EOF, Mr. Nauman concurs that the corrective actions taken by Applicants are satisfactory, but requires a demonstration of the operation of the relocated offsite portion of the EOF prior to final approval. Regarding the onsite portion of the EOF, the testimony is uncontroverted that that portion of the facility performed satisfactorily during the May 13, 1981 exercise and meets the regulatory requirements in this regard. The Board finds this issue favorably resolved upon completion of a demonstration which satisfies the concerns raised by Mr. Nauman. Such a demonstration should be completed prior to full power operation. Consequently, the Board finds that there is reasonable assurance that the physical design, communications equipment and operating procedures for the interim EOF will comply with the Commission's regulations, 10 C.F.R. § 50.47(b)(3) and § 50.47(b)(8). (See Finding 348 to 351 below)

K. CONTENTION 2.J

Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:

* * *

J. the methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a

radiological emergency condition within the ingestion pathway EPZ for SONGS 2 and 3, 10 C.F.R. §50.47(b)(9);

282. Under § 50.47(b)(9), adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition must be in use. In this contention, adequacy focused upon the ingestion pathway EPZ.

283. The NRC Staff testified with respect to this contention. Mr. Sears testified that he had examined the methods, staffing, systems and equipment available to Applicants for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the ingestion pathway EPZ for SONGS 2 and 3. The radiological monitoring capability available to the Applicants to deal with actual or potential offsite consequences of a radiological emergency condition within the plume exposure pathway EPZ would also be available to Applicants to deal with an emergency condition within the ingestion pathway EPZ. (Sears Testimony of August 20, 1981, pp. 12-13)

284. In addition, the Applicants have in place procedures for the collection of environmental samples in the event of a release of radioactive material to the environment during an emergency. The Technical Support Center has been designated by the Applicants as the place for receipt and analysis of field monitoring data. Federal agencies will coordinate their emergency radiological monitoring and assessment activities through the Federal Radiological Monitoring Assessment Plan (FRMAP). The Applicants will have space available in the EOF for a liaison from FRMAP. The Staff concluded that the Applicants'

provisions for assessing and monitoring the ingestion pathway EPZ satisfy the criteria of NUREG-0654, II.H and I which are the implementation criteria of 10 C.F.R. § 50.47(b)(9). (Id.)

285. Mr. K. Nauman of FEMA testified that he has examined the methods, staffing, systems and equipment available to offsite response organizations for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the ingestion pathway EPZ for SONGS 2 and 3 and that he has concluded that no ingestion pathway response capability had been demonstrated as of the date of his testimony. (Nauman Testimony of August 24, 1981, p. 14; Tr. 10,493)

286. Mr. Nauman further indicated that the State of California had a draft proposal which would be provided to FEMA some time in October or November 1981 at the earliest. (Nauman, Tr. 10,937-938)

287. The Applicants also presented testimony on this issue. Mr. D. Pilmer described the requirements for ingestion pathway emergency planning. Primary responsibility for implementing offsite emergency response actions with respect to the ingestion pathway rests at the State level. The licensee and the local government agencies have the responsibility of supporting the State and providing emergency response plans in the event the State has not completed its effort. Aid may be requested from a number of Federal agencies should the need arise. (Pilmer Testimony, pp. 27-30)

288. Mr. Pilmer testified that the Applicants' role is primarily supportive to help establish and initiate the operation of an ingestion pathway response plan. Applicants have prepared a baseline study of the ingestion pathway zone surrounding SONGS 2 and 3. (Applicants' Exhibit

121) The report provides fundamental descriptions of all basic food stuffs grown near SONGS 2 and 3 including crop types, production rates, important food ingestion pathways and radionuclides of potential importance. Based on the information contained in this report, Applicants are preparing a general emergency response plan for the ingestion pathway and implementing procedures. (Applicants' Exhibits 142 and 143) (Pilmer Testimony, pp. 30-35)

289. Mr. Pilmer also made reference to the draft plan prepared by the State and noted that that plan is generally consistent with the ingestion pathway plan being prepared by Applicants for SONGS 2 and 3. (Pilmer Testimony, pp. 30-36)

290. State and local witnesses also testified with respect to this issue. Mr. Turner of Orange County indicated that the State of California has primary responsibility for ingestion pathway planning. However, Orange County is prepared to assist the State and Applicants in sampling and sample analysis.

291. Arrangements have been made with the University of California at Irvine to provide analysis of samples of water, soil and air covering the entire ingestion pathway area. (Turner, Tr. 8923)

292. Mr. Hunt of San Diego County also testified as to that County's capabilities and involvement in offsite radiological monitoring. Mr. Hunt concluded that his County had adequate capability to monitor radiation in the environment and assess the impact of that radiation on the citizens of the County. (Hunt, Tr. 9276)

293. Finally, Mr. Kearns of the State Office of Emergency Services reported to the Board with respect to the status of the draft state plan.

The Radiologic Health Section of the California Department of Health Services has a draft plan and draft procedures in the process of finalization. Once these are considered adequate, the State will work with the affected counties to develop their input into the ingestion pathway process. Mr. Kearns was unaware of any problem areas or particular deficiencies with respect to the planning going on with respect to ingestion pathway. (Kearns, Tr. 10,187)

294. In the Board's view, the record reflects the evolving nature of the planning in the ingestion pathway area. Applicants' plans and implementing procedures are in a draft stage. The State's planning is likewise in draft stage at this time and efforts are clearly continuing in both areas. Indeed this matter has been noted as a deficiency by FEMA. While the record reflects that ingestion pathway planning is not finalized and capability in this area has not been demonstrated as noted by Mr. Nauman of FEMA, the Boards considers the current activities by both Applicants and the State OES as strong indication that compliance with § 50.47(b)(9) in the ingestion pathway EPZ area is being vigorously pursued. Significantly, it is a matter addressed in Applicants' plan of corrective actions in which FEMA has concurred. (See Applicants' Exhibits 144 and 146) Consequently, while the Board believes this item should be resolved prior to full power operation, the Board finds that there is reasonable assurance that the methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition at SONGS 2 and 3 will comply with the Commission's regulations, 10 C.F.R. § 50.47(b)(9). (See Findings 348 to 351 below)

L. CONTENTION 2.K

Whether there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3, affecting the offsite transient and permanent population, will comply with 10 C.F.R. § 50.47(a)(1) and (b) or (c)(1) as regards:

* * *

K. general plans for recovery and reentry, 10 C.F.R. § 50.47(b)(13).

295. § 50.47(b)(13) calls for general plans for recovery and reentry to be in place for use in the event of a radiological emergency. This contention questioned the adequacy of such planning.

296. The NRC Staff presented testimony with respect to the general plans which have been developed by the Applicants for recovery and reentry. Section 9 of the Applicants' Emergency Plan (Applicants' Exhibit 51) describes general plans for recovery and reentry. Criteria have been established for declaring that the emergency is under control and in the recovery phase. (Sears Testimony of August 20, 1981, pp. 13-14)

297. The Emergency Coordinator is responsible for notification to all offsite authorities that the emergency has shifted to a recovery phase. Planned radiation exposure limits for urgent reentry shall be in accordance with National Council on Radiation Protection (NCRP) criteria and, in any lesser situation, the criteria of 10 C.F.R. Part 20 apply. Analyses will be performed to estimate population exposure from all applicable exposure pathways. The general structure of a long-term recovery organization is described in the Emergency Plan. (Id.)

298. In the Staff's view, the Applicants' plans for recovery and reentry satisfy the criteria of NUREG-0654 II. N which are the implementation criteria for 10 CFR §50.47(b)(13). (Id)

299. Mr. K. Nauman of FEMA also addressed this issue. Mr. Nauman testified that the planning performed by local jurisdictions generally meets the requirements of §50.47(b)(13) in regard to reentry and recovery. (Nauman, Tr. 10,375) Some additional information may be necessary. (Nauman, Tr. 10,501-502) Mr. Nauman further testified that the reentry and recovery plans and procedures as presently identified within the planning are considered minimally adequate in light of the fact that "they generally address that some planning will be accomplished at a future time". (Nauman, Tr. 10,942)

300. The Applicants also presented testimony on this issue. Mr. D. Pilmer described the general plans for recovery and reentry. Mr. Pilmer explained the general composition and functions of the onsite and offsite recovery organizations. An onsite recovery organization will be formed with resources provided as best fits the nature of the recovery operation. The object of the onsite recovery effort is to make repairs, to take positive steps to prevent recurrence of the same accident, and to return the facility to a safe condition for renewed operations. An offsite recovery organization will be formed by Southern California Edison, local, State and Federal agencies. The recovery organization will operate out of the EOF. The first function of the recovery organization is to determine which land areas are contaminated. Those areas will then be decontaminated. (Pilmer Testimony, pp. 36-38)

301. Mr. E. Murri of NUS testified on behalf of Applicants that, in his opinion, planning for reentry and recovery is a secondary and not a critical element of emergency planning and preparedness. Such planning should be general and not extremely detailed. The time element for performing reentry and recovery functions is generally not crucial and there is ample time for ad hoc detailed planning by knowledgable individuals based on the prevailing conditions. The important aspects of pre-planning for reentry should include criteria for radiation exposure and guidance regarding radioactive contamination control. For recovery, the important aspects are a pre-established recovery organization and arrangements augmenting existing resources. Mr. Murri concluded that the Applicants' Emergency Plan (Applicants' Exhibit 51) adequately addressed these elements. (Murri Testimony, pp. 63-65)

302. State and local officials also testified on this issue. Mr. Turner of Orange County testified that the Orange County plan has delineated responsibilities and assigned tasks in this area and that, in his judgment, this area was a non-critical item at this point. Mr. Turner believed that reentry and recovery programs should be conducted on a ad hoc basis due to the inability to pre-plan and anticipate the types of situations that could be encountered. (Turner, Tr. 8921-22)

303. Colonel Wallace of the Marine Corps testified as to the Marine Corps' planning for redeployment. The Corps has no ad hoc plans for redeployment in the event of a radiological emergency at SONGS 2 and 3 but does not view such an effort as a significant problem. (Wallace, Tr. 9339-40)

304. Finally, Mr. Kearns of the State OES addressed this issue. Mr. Kearns viewed recovery and reentry as a combined local, State and Federal problem. The State Health and Safety Code designates the Radiologic Health Section of the California Department of Health Services to set standards regarding reentry. Once it has established these standards; it will then assess the monitoring that is done and work with the locals jurisdictions and all other parties regarding decontamination to reach those levels. (Kearns, Tr. 10,188)

305. The testimony is uncontroverted that prudent planning for a radiological emergency does not call for specific and detailed identification of the measures which would govern the recovery and reentry phase of such an emergency. The planning standard itself speaks in terms of general plans for recovery and reentry. (See 10 C.F.R. § 50.47(b)(13)) The State and local jurisdictions have given general consideration to such planning. In addition, the Applicants have made general provisions in this area. Both Mr. Sears of the NRC Staff and Mr. Nauman of FEMA testified that they have examined the provisions which are in place and that they are satisfactory and comply with the terms of the Commission's regulations. Consequently, the Board finds that there is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3 complies with 10 C.F.R. § 50.47(b)(13) with respect to general plans for recovery and reentry.

M. CONTENTION 3

The emergency response plans fail to meet the requirements of 10 C.F.R. § 50.47(c)(2) because local emergency planning

officials have arbitrarily established the boundaries of the Plume Exposure EPZ in that they have mechanically applied a 10 mile boundary and that the Interagency Agreement (IAEP) among all local jurisdictions defines the EPZ by drawing compass lines on a map of the area. In determining the exact size of the EPZ, emergency planning officials have failed to consider the following local conditions:

1. topography
2. meteorology
3. evacuation routes
4. demography
5. jurisdictional boundaries
6. SAI report
7. land characteristics

306. One of the substantive legal issues briefed at the request of the Board dealt with that portion of the Commission's regulations setting out how the size of the plume exposure pathway EPZ should be established. (See 10 C.F.R. § 50.47(c)(2))

307. All parties addressed this issue. Intervenor Carstens, et al. argued that the Commission's regulations required that the plume exposure pathway EPZ be determined on the basis of a site-specific study. Furthermore, based upon the Science Applications, Inc. (SAI) study, a plume exposure pathway EPZ of about 20 miles was called for. (Memorandum: Points and Authorities Regarding Size of EPZ dated June 17, 1981 and Addendum Thereto of June 22, 1981).

308. Intervenor GUARD also argued that site-specific studies were required and that the actual EPZs for SONGS 2 and 3 were drawn in a mechanical way contrary to the intent of the Commission's regulations. (Intervenor GUARD's Comments Concerning the Issue of the Size of the Emergency Planning Zones dated June 24, 1981).

309. Both Applicants and NRC Staff urged that site-specific studies were not required. These parties argued that the Commission's

regulations substantially set EPZ size and that site-specific studies are not called for. What is called for is the exercise of judgment by local planning officials to account for local variations and the development of a coordinated boundary. (Applicants' Memorandum of Law on Appropriate Means For Determining Size of the Plume Exposure and Ingestion Pathway Emergency Planning Zones for SONGS 2 and 3 under 10 C.F.R. § 50.47(c)(2) dated June 22, 1981; and NRC Staff Views with Respect to Questions Posed by the Atomic Safety and Licensing Board in the Area of Emergency Planning dated June 22, 1981.)

310. As reflected in its ruling on the record (Tr. 3497-3500; Tr. 6804-06), the Board concurs in the position advanced by Applicants and the NRC Staff.

311. The size of the EPZs are substantially set by regulation. To the extent that the Board in Cinncinati Gas and Electric Co. et al. (William H. Zimmer Nuclear Station), LBP-80-19, 12 NRC 67, 73 (1980) took a different view, that Board's ruling considered EPZs in the context of a Commission policy statement and not in the context of final Commission regulations which this Licensing Board presently has before it.

312. The Commission's regulations on this point read:

> Generally, the plume exposure pathway EPZ for nuclear power plants shall consist of an area of about 10 miles (16 km.) in radius. And the ingestion pathway EPZ shall consist of an area of about 50 miles (80 km.) in radius. The exact size and configuration of the EPZ surrounding a peticular nuclear power reactor shall be determined in relation to local emergency response needs and the capabilities as they are affected by such conditions as demography, topography, land characteristics, access roads and jurisdictional boundaries. The size of EPZs may also be determined on a case-by-case basis for gas-cooled

> nuclear reactors and for reactors with an authorized power level less than 250 MW thermal. 10 C.F.R. 50.47(c)(2).

313. The determination of EPZs on a case-by-case basis is reserved for gas-cooled reactors or reactors with limited power levels. In general, the Commission's regulations provide a standard of about 10 miles or about 50 miles for the respective EPZs. No site-specific studies are contemplated. The Statement of Consideration accompanying the promulgation of the rule supports the proposition that extensive studies had already been done during the rule-making and were the basis for the Commission's determination of EPZ sizes. There the Commission stated:

> The EPZ for airborne exposure has a radius of about 10 miles; the EPZ for contaminated food and water has a radius of about 50 miles. Predetermined protective action plans are needed for the EPZs. The exact size and shape of each EPZ will be decided by emergency planning officials after they consider the specific conditions at each site. These distances are considered large enough to provide a response base that would support activity outside the planning zone should this ever be needed. (Emphasis supplied.) 45 Fed. Reg. 55406 (August 19, 1980).

314. Further support for this interpretation can be gleaned from the Commission Policy Statement outlining the Planning Basis for Emergency Responses to Nuclear Power Reactor Accidents. The Policy Statement makes reference to NUREG-0396 and the statement goes on to indicate that the "NRC concurs in and endorses for use the guidance contained in the task force report." 44 Fed. Reg. 61123. In NUREG-0396, the EPZ concept is discussed. It is clear from that report that the 10 mile and 50 mile radii were selected on the basis of substantive

generic studies and were to be firm distances subjected to only minor variation to take into account in a judgmental way local conditions such as demography, topography, land characteristics, access routes and local jurisdictional boundaries.

315. Thus, the only variation of the 10 mile and 50 mile limits was intended to suit the peculiarities of a local site based upon inspection and an exercise of judgment by local planning officials. Extensive site-specific studies are not required.

316. Contention 3 was limited by the Board to an exploration of the judgment made by local planning officials and whether those judgments properly considered the factors enumerated in the contention. The SAI Report was a factor to be considered, in the Boards' view, given its focus on California nuclear plants. It is in this context that the Board now reviews the record in this proceeding.

317. FEMA testified with respect to this contention. Mr. Nauman testified that the criteria of NUREG-0654 relating to the determination of the plume exposure pathway EPZ were addressed in the review of the San Onofre offsite emergency plans. The informal FEMA/RAC review noted a consideration of topography, demography, land characteristics, access routes and jurisdictional boundaries. Those factors were also considered by FEMA Region IX in the review of the offsite emergency response plans and the EPZs contained in the plans are considered reasonable and in conformance with FEMA planning guidance. (Testimony of Mr. Kenneth W. Nauman, Jr.)

318. The plans, however, are not totally consistent with respect to the precise boundaries of the plume exposure pathway EPZ. The FEMA

review considered the plume exposure pathway EPZ to encompass the jurisdictions of Dana Point and San Juan Capistrano. (Nauman, Tr. 10,601) Mr. Nauman testified that the Orange County plan makes reference to the fact that the plume exposure pathway EPZ includes those communities while other testimony in the proceeding was to the effect that those communities were in an "extended" plume exposure pathway EPZ but not within the EPZ established pursuant to the Commission's regulations. (Nauman, Tr. 10,990-992; Applicants' Exhibit 53) (See Finding 319 below). The Emergency Plans for the Cities of San Clemente and San Juan Capistrano and the County of San Diego as well as the IAEP merely reflect the plume exposure pathway EPZ as a 10-mile circle. (Applicants' Exhibits 53, 55 and 56) Mr. Nauman further testified that this conflict, which concerns primarily the absence of sirens or other forms of prompt notification in the "extended" EPZ, could be resolved in timely fashion through the IJPC. (Id.)

319. Mr. D. Pilmer described how the exact size and shape of the plume exposure pathway EPZ were established. The configuration of the jurisdictional boundaries, configuration of evacuation roadways and distinct land characteristics were considered. The San Juan Creek was identified as a highly distinctive land feature which created a natural open space between residential communities. Thus, the San Juan Creek was chosen as a desirable EPZ boundary from its termination at the beach to the inland point where it passes beneath the Ortega Highway. This portion of San Juan Creek generally lies at the radius of 10 miles from SONGS 2 and 3. In all other directions, there was found to be no populated area generally between 9 and 12 miles in radius. Therefore,

with one minor exception, the radius was simply defined as being 10 miles without any reference to geographical features or jurisdictional boundaries. The exception is that a 10-mile radius would include a very small portion, less than one-half square mile, of Riverside County. This area was described to be a remote mountainous area and was excluded from the EPZ based on the jurisdictional boundary of Riverside County. With the EPZ so defined, Dana Point is entirely outside the EPZ, Capistrano Beach is entirely inside the EPZ and the city of San Juan Capistrano is divided into one area within the EPZ and a second area outside the EPZ. (Pilmer Testimony, pp. 14-19)

320. Mr. Pilmer added that EPZ size determination was discussed with the planning officials for Orange County and San Juan Capistrano. (Id.)

321. Mr. Murri of NUS testified on behalf of Applicants and described the role NUS played in recommending the boundaries of the plume exposure pathway EPZ. Mr. Murri recounted that he met initially with Mr. Pilmer to discuss the need to define boundaries that would be easily understood by local officials and the general public. Maps were used to review existing political boundaries, topography, land characteristics and evacuation routes. Initial reaction indicated that to the north, San Juan Creek was almost exactly at the 10-mile radius. The NUS tentative recommendation was that San Juan Creek be a plume exposure pathway EPZ boundary. Discussions were then held with local officials of Orange County and San Juan Capistrano whereupon it was agreed that San Juan Creek would form the boundary of the plume exposure pathway EPZ but that for purposes of public information and evacuation planning, Dana Point

and the portion of San Juan Capistrano beyond the plume exposure pathway EPZ would be considered. (Murri Testimony, pp. 81-83)

322. The Staff also addressed this contention and discussed the consideration to be given to the SAI Report. Mr. J. Sears of the Staff described the SAI Report as a study of the consequences of serious nuclear power plant accidents for sites in California conducted for the State of California by SAI and several subcontractors. (Sears EPZ Testimony, pp. 2-4)

323. The Staff has reviewed the SAI Report. The risk study performed for the State of California is similar in many aspects to those studies that were the basis of NUREG-0396. A difference between NUREG-0396 and the SAI Report was in the calculation of the amount of radiation people would be exposed to during an evacuation. SAI assumed that people would be exposed to the plume and ground contamination for an extended period while NUREG-0396 assumed that people would be exposed to radiation during cloud passage and then to ground contamination for four additional hours. (Id.)

324. In applying the SAI Report, the State of California assumed that people would be exposed to ground contamination for seven days and consequently has recommended extended emergency planning zones larger than the 10 miles called for by the NRC's regulations. If a more realistic time (shorter) were assumed in the California study, the EPZ sizes derived using the OES methodology would have been similar to those in NUREG-0396. (Id.)

325. The NRC Staff testified that it had no objection to offsite authorities laying explicit plans for distances farther than 10 miles if those authorities choose to expend resources for this purpose. (Id.)

326. In the Staff's view, after examining the SAI Report, and the State OES use of the SAI Report, there is no basis for any modification of the plume exposure pathway EPZ selected for SONGS 2 and 3. (Id.)

327. The Applicants also provided testimony on this issue. Mr. Woodard, a Senior Consultant of Pickard, Lowe & Garrick, testified on behalf of the Applicants with respect to the SAI Report. Mr. Woodard considered the data and methodology used in the SAI Report and determined whether that report verified the conservatism of the plume exposure pathway EPZ. (Woodard Testimony, pp. 1-2)

328. Mr. Woodard summarized and evaluated the methodology used in the SAI Report. Mr. Woodard concluded that, if the results of the calculations of the SAI Report are properly evaluated, they support establishment of a plume exposure pathway EPZ around SONGS 2 and 3 which is equal to or less than a radius of 10 miles. Furthermore, Mr. Woodard had reviewed the meteorological data contained in the SAI Report as well as additional meteorological data provided by Applicants and has independently examined the demography and topography around SONGS 2 and 3. Mr. Woodard concluded that the particular meteorological, demographic and topographical conditions in the vicinity of SONGS 2 and 3 as utilized in the SAI Report supports the conservatism of the plume exposure pathway EPZ selected for SONGS 2 and 3. If actual meteorological data, terrain conditions and population distribution information around SONGS 2 and 3 had been more rigorously accounted for in the SAI Report, lower doses and

fewer consequences would be expected. Finally, Mr. Woodard concludes that adequate consideration has indeed been given to the factors set forth in this contention, i.e., topography, meteorology, demography, land characteristics and the SAI Report. (Woodard Testimony, pp. 2-16)

329. The southern portion of the plume exposure pathway EPZ is entirely within Camp Pendleton. Discussions between the Marine Corps and Applicants revealed that the Marine Corps would not require some type of a definable boundary as they would plan to evacuate to at least a 10 mile radius. (Id.)

330. With respect to the involvement of local officials in the determination of the plume exposure pathway EPZ, both Ms. Ferguson of San Juan Capistrano and Mr. Turner of Orange County testified that those political jurisdictions had indeed been involved in the decision-making process which led to the final determination of EPZ size. (Ferguson, Tr. 8688, et seq.; Turner, Tr. 8900, et seq.) Mr. Turner has indicated that Orange County is in the process of conforming the County plan to the NUREG-0654 criteria to provide an EPZ of about 10 miles (Turner, Tr. 8910), although to date it extends from about 8 to 12½ miles (Id.) Ms. Ferguson stated that the City has, as an interim measure, approved a 10 mile zone. (Ferguson, Tr. 8725)

331. Mr. Mecham, a member of the San Clemente City Council, testified in a non-official capacity that the City of San Clemente had not been contacted with respect to EPZ size. (Mecham, Tr. 10,054, et seq.) Given the proximity of San Clemente to the facility, it appears self-evident to the Board that the City of San Clemente would be within the EPZ for planning purposes and that the extensive involvement of San

Clemente officials with respect to public notification and evacuation enforces this fact.

332. Finally, Mr. Kearns, Deputy Director of the State of California Office of Emergency Services, testified as a witness subpoenaed on behalf of Intervenors on this subject. Mr. Kearns testified that planning zones in the State of California emergency plan include two areas. One is identified as the basic planning zone in which evacuation is the most viable countermeasure. The basic zone includes the City of San Juan Capistrano and Dana Point. On the basis of the study done for the State of California by SAI, the State determined the need for a second, extended planning zone with the development of the emergency response in that zone to be made in consultation with the affected counties. In the basic emergency planning zone, the State would expect the criteria of NUREG-0654 to be met. (Kearns, Tr. 10,147-148; Intervenors' Exhibit 23)

333. The extended emergency planning zone takes into consideration the more serious accidents. In the State's view, some planning action should be taken at this point in time with the procedures to be developed with the affected counties rather than approaching the problem on an ad hoc basis. (Kearns, Tr. 10,150) Mr. Kearns further testified that the State has no conflict with the plume exposure pathway EPZ as that zone has been drawn by Orange County. While the State would have incorporated the entire Marine Corps base within the plume exposure pathway EPZ, the State lacks the jurisdiction to achieve that end. (Kearns, Tr. 10,152) This would have had the affect of extending the plume exposure pathway EPZ by approximately two miles. (Kearns, Tr. 10,190)

334. The State concurs that the basic plume exposure pathway EPZ within Orange County of approximately 10 miles is adequate for planning around SONGS 2 and 3. Members of the State staff worked with Orange County officials in defining the zone. (Kearns, Tr. 10,163) Mr. Kearns testified that, with respect to the extended planning zones developed by the State in conjunction with local officials, State guidance is unique and consequently there would be no conflict between the emergency planning requirements set down by the NRC and those imposed by the State. (Kearns, Tr. 10,186) Nor did Mr. Kearns think that there was any potential for confusion in having in effect two sets of requirements in this area. (Kearns, Tr. 10,197)

335. The evidence is uncontroverted that the plume exposure pathway EPZ developed for Applicants in conjunction with State and local officials properly considered the relevant factors of topography, demography, land characteristics, jurisdictional boundaries, meteorology and the SAI Report in all areas with the exception of Camp Pendleton. With respect to Camp Pendleton, the State of California would recommend extending the plume exposure pathway EPZ to the jurisdictional boundaries of the Camp, an extension of approximately 2 miles. While the Board recognizes some basis for such an extension as expressed in the testimony of Mr. Kearns on this subject, the absence of any sizable populations on the Marine Corps base whose protection would be enhanced by an extension of the zone, the demonstrated logistical capabilities of the Marine Corps to move their personnel from the remaining portions of the Camp should this be called for, and a recognition by the Board that the interests of common defense and continued functioning of the Corps might well be best

served if the Corps were to retain its personnel and equipment on the property of Camp Pendleton yet outside of the 10 mile EPZ to facilitate the Corps' prime mission of continued common defense, persuades the Board that the 10-mile EPZ within the Camp Pendleton facility is appropriate and complies with the Commission's regulations.

336. To the extent the State of California wishes to carry on pre-planning in addition to that called for by the Commission's regulations outside of the plume exposure pathway EPZ, the record indicates that such additional planning would not vitiate the planning called for by the Commission's regulations and consequently was not a factor in the Board's considerations on Contention 3.

337. Finally, both the NRC Staff and FEMA have considered the factors articulated in Contention 3 and have concluded that those factors have been appropriately considered. The Board notes that the record does reflect some confusion with respect to the description in local emergency plans of the northern portion of the plume exposure pathway EPZ. Although this matter was not initially identified as a deficiency by FEMA, Mr. Nauman of FEMA was of the view that this discrepancy could be easily resolved through the IJPC. Thus, as we understand the situation, the confusion which remains concerns whether the plume exposure pathway EPZ which has been drawn at about 10 miles taking into consideration the appropriate factors specified in the Commission's regulations, which apparently has been agreed to be satisfactory by the local jurisdictions (Turner, Tr. 8910-8911; Ferguson, Tr. 8725-8726) and which, but for the deficiencies discussed at length in this decision, complies with the planning standards in 10 C.F.R. § 50.47(b), should, as

a desirable or prudent measure, be further extended to encompass Dana Point and San Juan Capistrano in its entirety. We reiterate that, as more fully discussed above, the element of the planning standard not met in the extended area relates to public alerting measures - e.g., sirens. Given the at least tacit acknowledgment of all jurisdictions involved in determining the configuration of the EPZ that local emergency response needs and capabilites, 10 C.F.R. § 50.47(c)(2), are accounted for by the 10 mile plume exposure pathway EPZ and the absence of evidence compelling, from a health and safety standpoint, an extension of this area, we are satisfied that the 10 mile EPZ has been rationally determined, consistent with the Commission's regulations and guidance. We have, in reaching this conclusion considered the fact that FEMA has not as an agency taken a position on this question (Nauman, Tr. 10,992) although it has, as part of its evaluation considered planning in the extended area. (See Finding 318) In any event, the Board agrees that this matter is readily amendable to resolution and should be promptly addressed.

N. CONCLUSION

338. The Board has reviewed the entire record in this proceeding. Applicants' onsite emergency preparedness has been reviewed and evaluated by the NRC Staff and found to be acceptable. Based on the evidence of record as fully recounted above, the Board concurs in this finding with respect to the issues in controversy.

339. This proceeding is complicated, however, by the interim findings and determination of June 3, 1981 issued by FEMA wherein inadequacies with respect to offsite emergency preparedness were identified. Under the Commission's regulations, the interim FEMA findings and determination are entitled to a presumption of validity. (See 10 C.F.R. § 50.47(a)(2))

340. The presumption, however, is a rebuttable one and, with respect to the issues in controversy, the Board views the Applicants' position in this proceeding as one seeking to demonstrate that the interim FEMA findings and determination of June 3, 1981 no longer have continuing validity. (The effect of the December 1, 1981 FEMA findings, if any, will be examined by this Board pending receipt of the views of the parties.)

341. Toward this end, the Applicants presented testimony dealing in part with the steps they have taken in their program of corrective action which was concurred in by FEMA. (Applicants' Exhibits 144 and 146)

342. To some degree, Applicants challenged the interim findings and determination. In the opinion of Mr. Murri of NUS, FEMA reviewers did not have sufficient time or information, given their limited staffing and limited direct contact with the primary response organizations, to fully acquaint themselves with existing SOPs and the overall implementation capabilities of these organizations. (Murri Testimony, pp. 86-87)

343. This judgment was sharply challenged by FEMA. Mr. Nauman testified that FEMA did have adequate time and staff to prepare its review. With respect to SOPs, they are not necessary to make an adequate evaluation of the exercise. Mr. Nauman continued to be of the view that

the interim findings and determination of June 3, 1981 were substantively correct. (Nauman, Tr. 10,588-597)

344. Representatives of the various local jurisdictions also took issue with the interim findings and determination of June 3, 1981. (Coleman, Tr. 8609-21; Fox, Tr. 9032-35; Applicants' Exhibit 141; Hunt, Tr. 9285-87; Applicants' Exhibit 145; Wallace, Tr. 9343-49)

345. In the main, however, Applicants attempted to develop a record demonstrating that substantial improvements had been made in the area of emergency preparedness since the interim findings and determination of June 3, 1981 and, consequently, given this changed state of affairs, emergency preparedness for SONGS 2 and 3 was now adequate. (See 10 C.F.R. § 50.47(c)(1))

346. For its part, FEMA's review of offsite emergency preparedness focused on events leading up to the issuance of the June 3, 1981 interim findings and determination. FEMA had not engaged in a substantive review of subsequent developments, i.e., the steps taken by the Applicants and local jurisdictions to upgrade their emergency preparedness. FEMA was awaiting completion of Applicants' program of corrective action before re-assessing the adequacy of offsite emergency preparedness for SONGS 2 and 3. (Applicants' Exhibit 146) Thus, the Board did not have the benefit of FEMA's judgment in this regard, and consequently, the Applicants' evidence developed with respect to upgraded offsite emergency prepareness stood unassessed by either the NRC Staff or FEMA at the end of the hearing on September 30, 1981.

347. The NRC Staff and Applicants both urged that the record in this proceeding could be closed and the issue decided by the Board

without further FEMA findings and determination. The Applicants rested on the state of the record they had developed. The NRC Staff urged that this Board could find reasonable assurance that adequate protection measures can and will be taken in the event of a radiological emergency at SONGS 2 and 3 on the emergency preparedness issues in controversy assuming completion of the Applicants' corrective action program prior to full power operation. (Staff Exhibit 12, p. 13-4)

348. In essence, the Staff argued that the corrective actions which remain to be done are of a straightforward nature. Deficiencies have been identified, corrective action has been proposed by Applicants and concurred in by FEMA and it can be left to the NRC Staff, in conjunction with FEMA, to insure completion prior to full power operation. (Grimes, Tr. 11,009-014) Mr. Grimes reviewed Applicants' Exhibit 144 and discussed each of the items in the corrective action program as to those which might be straightforward and as to those which might require the exercise of some judgment. Mr. Grimes discussed the 7 items on Enclosure 2 of Applicants' Exhibit 144. Item 1 lists a number of SOPs to be developed. Mr. Grimes testified that SOPs were analogous to plant procedures which the NRC's Office of Inspection and Enforcement would inspect but which are not reviewed by the NRC Staff in the development of Safety Evaluation Reports. Item 2 concerns procurement of equipment to carry out radiation monitoring functions. While some judgment may be necessary with respect to adequate quantities, Mr. Grimes was of the view that this was a fairly straightforward item. Item 3 was development of additional communication capability and consists of fairly straightforward installation of commercially available equipment. Item 4

requires physical improvements to the EOF and is slightly more judgmental in that the commitment is to make whatever improvements are feasible in the physical spaces in the interim EOF. However, with the exception of a demonstration, Mr. Nauman of FEMA was satisfied with changes which have been made. (See Finding 277 above) Item 5, installation and testing of sirens, is straightforward. Item 6 requires the completion of training and requires some evaluation on the part of FEMA. Mr. Grimes stated that this area was analogous to the NRC Staff's inspection process in the plant emergency preparedness area. Item 7 deals with the Public Information Program and requires further FEMA review but the item is not of such a nature that it should hold up an operating license. An additional item, Item 8 was noted by Mr. Grimes, namely, coordination among the Applicants and local jurisdictions as to the exact nature of the plume exposure pathway EPZ. FEMA indicated that this item is easily resolved. (See Finding 318 above) (Grimes, Tr. 11,159-164)

349. In essence, the Staff argues that, given the program of corrective action in which FEMA has concurred and given the Applicants' commitment to execute that program prior to full power operation and the continuing oversite of FEMA and the NRC Staff, the Board presently has the requisite reasonable assurance to make the findings called for under 10 C.F.R. § 50.47(a) with respect to each of the issues in controversy. This judgment, namely that given the commitment of Applicants' and local jurisdictions to the correction of the deficiencies noted in the FEMA interim findings and determination of June 3, 1981 and their continuing efforts to correct these deficiencies, and provided that the needed corrective actions are completed, there is reasonable assurance that

adequate protective measures can and will be taken in the event of a radiological emergency at SONGS 2 and 3, was concurred in by FEMA. (Additional Testimony of Kenneth Nauman, Jr.)

350. The Board concurs with the NRC Staff that the record as developed through September 30, 1981 is sufficient to support a Board finding of reasonable assurance with respect to the issues in controversy. On a number of the issues in controversy in this proceeding, Mr. Nauman of FEMA had already concluded that the steps taken by Applicants' and offsite jurisdictions were adequate to meet the Commission's regulations. The record evidence with respect to these issues is fully recounted above and, in each instance, the Board is satisfied that the Commission's regulations had indeed been met.

351. With respect to the remaining contentions Mr. Nauman of FEMA was not in a position at the hearing to testify as to compliance with the Commission's regulations. Rather, the record consisted of testimony presented by Applicants' and Intervenors' witnesses which evidence was not, as previously noted, assessed by either the NRC Staff or FEMA. With respect to these contentions, certain items remained to be done in Mr. Nauman's view. These items are set out in this Board's findings with respect to each contention. In the Board's view, the existence of the corrective action program, the record evidence attesting to ongoing implementation of these corrective action items by Applicants and local jurisdictions, and NRC Staff and FEMA oversight gives this Board the requisite reasonable assurance called for by 10 C.F.R. § 50.47(a) to conclude that the remaining issues in controversy are acceptably resolved and the Board so finds.

IV. CONCLUSIONS OF LAW

The conclusions of law which follow are in addition to those conclusions of law reached by this Board with respect to the geology/seismology and low power contentions considered in this proceeding. Any finding of fact which is more properly a conclusion of law is hereby incorporated in these conclusions of law.

This Board must make additional findings pursuant to 10 C.F.R. § 50.57(a) as to which there is a controversy with respect to the activities sought to be authorized. With respect to the six findings called for under § 50.57(a), only subparagraphs (2), (3) and (6) require a Board determination in the context of the matters in controversy.

Based upon consideration of the record of the proceeding and in light of the findings and discussion contained in this Initial Decision, the Board concludes that, to the extent relevant to the matters in controversy, SONGS 2 and 3 will operate in conformity with the application as amended, the provisions of the Act, and the rules and regulations of the Commission; that there is reasonable assurance (i) that the activities authorized by the operating licenses can be conducted without endangering the health and safety of the public and (ii) that such activities will be conducted in compliance with the regulations of the Commission; and, that issuance of the license will not be inimical to the health and safety of the public.

Upon consideration of the entire record of this proceeding, and in light of the foregoing findings and discussion, the Board concludes that, with respect to the requirements of the Atomic Energy Act of 1954, as amended, and the rules and regulations of the Commission relating to

radiological health and safety and the common defense and security and the extent relevant to the matters in controversy:

(1) There is reasonable assurance that the offsite transient and permanent population within the plume exposure pathway Emergency Planning Zone can be evacuated or otherwise adequately protected in the event of a radiological emergency with offsite consequences occuring at SONGS 2 and 3 as required by 10 C.F.R. § 50.47(a)(1), (b)(10) and Part 50, Appendix E.IV.

(2) There is reasonable assurance that the emergency response planning and capability of implementation for SONGS 2 and 3 affecting the offsite transient and permanent population complies with the Commission's regulations in that:

A. procedures for notification by Applicants of State and local response organizations and for notification of and continued communication among emergency personnel by all involved organizations are in place and capable of implementation as required by 10 C.F.R. § 50.47(b)(5) and (b)(6).

B. the means for notification and instruction to the populace within the plume exposure pathway Emergency Planning Zone are in place and capable of implementation as required by 10 C.F.R. § 50.47(b)(5).

C. information has been developed and procedures are in place and capable of implementation for information to made available to the public on a periodic basis on how they will be notified and what their initial actions should be

in the event of an emergency as required by 10 C.F.R. § 50.47(b)(7).

D. arrangments have been made and are capable of implementation for the provision of medical services for contaminated injured individuals as required to 10 C.F.R. § 50.47(b)(12).

E. adequate emergency facilities and equipment to support the emergency response, specifically necessary transportation and communication equipment and emergency operation centers of the principal response organizations, have been provided and are capable of use as required by 10 C.F.R. § 50.47(b)(8).

F. each principal response organization has the capability to respond to a radiological emergency and to augment this initial response on a continuous basis as required by 10 C.F.R. § 50.47(b)(1).

G. radiological emergency response training has been provided to those who may be called upon to assist in an emergency as required by 10 C.F.R. § 50.47(b)(15).

H. the methods, staffing, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the plume exposure pathway EPZ for SONGS 2 and 3 are adequate as required by 10 C.F.R. § 50.47(b)(9).

I. the physical design, communications equipment and operating procedures for the interim Emergency Operations

Facility are adequate as required by 10 C.F.R. § 50.47(b)(3) and (b)(8).

J. the methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition within the ingestion pathway EPZ for SONGS 2 and 3 are adequate as required by 10 C.F.R. § 50.47(b)(9).

K. general plans for recovery and reentry have been developed as required by 10 C.F.R. § 50.47(b)(13).

(3) The plume exposure pathway Emergency Planning Zone for SONGS 2 and 3 has been developed in accordance with the Commission's regulations, specifically 10 C.F.R. § 50.47(c)(2), in that it has been determined in relation to local emergency response needs and capabilities as they are affected by the topography, meteorology, evacuation routes, demography, jurisdictional boundaries, and land characteristics associated with SONGS 2 and 3 in its environment and the SAI Report.

V. ORDER

IT IS HEREBY ORDERED, pursuant to the Atomic Energy Act of 1954, as amended and the U.S. Nuclear Regulatory Commission regulations, and based on the findings and conclusions set forth herein and in our Partial Initial Decision on the Low Power Motion, that subject to making the other findings set forth in 10 C.F.R. § 50.57(a), the Director of Nuclear Reactor Regulation is authorized to issue to Applicants Southern California Edison Company, San Diego Gas & Electric Company, City of

Anaheim, California, and City of Riverside, California, a license to authorize full-power operation for Units 2 and 3 of San Onofre Nuclear Generating Station, for a term of not more than forty (40) years at stated power levels not to exceed 1100 megawatts thermal per Unit.

IT IS FURTHER ORDERED, in accordance with Sections 2.760, 2.762, 2.764, 2.785 and 2.786 of the Commission's Rules of Practice, that this Initial Decision shall not be effective pending further action by the Commission.

ATOMIC SAFETY AND LICENSING BOARD

James L. Kelly, Esq., Chairman

Dr. Cadet H. Hand, Jr.

Mrs. Elizabeth B. Johnson

Respectfully submitted,

Lawrence J. Chandler
Deputy Assistant Chief Hearing Counsel

Donald F. Hassell
Counsel for the NRC Staff

Dated at Bethesda, Maryland
this 3rd day of December, 1981

APPENDIX A

WITNESS LIST

NRC STAFF'S DIRECT WITNESSES

Brian K. Grimes
Harry Rood
John R. Sears
Kenneth W. Nauman, Jr.

Testimony of John R. Sears of the NRC Staff on GUARD Contentions 1, 2.E, 2.I, 2.J, and 2.K Related to Emergency Preparedness For the San Onofre Nuclear Generating Station, Units 2 and 3, dated August 20, 1981 (Sears Testimony of August 20, 1981) follows Tr. 10,644.

Testimony of John R. Sears of the NRC Staff on GUARD Contentions 2,A, 2.B, 2.C, 2.D, 2.F, 2.G and 2.H Related to Emergency Preparedness For the San Onofre Nuclear Generating Station, Units 2 and 3, dated August 6, 1981 (Sears Testimony of August 6, 1981) follows Tr. 10,644.

Testimony of John R. Sears of the NRC Staff on EPZ Contention Admitted By ASLB Order on the Record of August 4, 1981 (Tr. 6803) (Sears EPZ Testimony) follows Tr. 10,648.

Testimony of FEMA's Mr. Kenneth W. Nauman, Jr., on GUARD Contentions 1 and 2 Related to Emergency Preparedness For the San Onofre Nuclear Generating Station, Units 2 and 3, dated August 24, 1981 (Nauman Testimony of August 24, 1981) follows Tr. 10,372.

Direct testimony of Mr. Kenneth W. Nauman, Jr.; the Testimony of Mr. Kenneth W. Nauman, Jr.; and The Additional Testimony of Mr. Kenneth W. Nauman, Jr., follow Tr. 10,420.

APPLICANTS' DIRECT VOLUNTARY WITNESSES

T. James DuBois
James L. Willis
Eugene N. Cramer
Kenneth P. Barr
Dr. Roger E. Linnemann
Dr. Jack E. Hauck
Harold B. Ray
Ernest L. Murri
Bryant T. Brothers
Keith Woodard
David F. Pilmer

APPLICANTS' DIRECT SUBPOENAED WITNESSES

Chief Ben Killingsworth
California Highway Patrol
(Border Division)

David H. Roper
California Department of Transportation
(District 7)

Calvin Nash
American Red Cross
(Orange County Chapter)

Jack P. Stowe
Pendleton Coast Office,
State Department of Parks & Recreation

Ronald J. Coleman
City of San Clemente

Cynthia S. Ferguson
City of San Juan Capistrano

Donald W. Poorman
Communications Division
Orange County General Services Agency

Jill M. Swanson
Capistrano Unified School District

Egbert S. Turner
Emergency Services Division
Orange County General Services Agency

Barbara Fox
General Services Agency
Orange County

APPLICANTS' REBUTTAL WITNESSES

Dr. Roger E. Linnemann
Bryant T. Brothers
David F. Pilmer

All of Applicants' prefiled written testimony was placed into the record in this proceeding on August 31, 1981, and encompasses Tr. 6994-7398.

INTERVENORS' DIRECT WITNESS

Dr. Sheldon C. Plotkin

INTERVENORS' SUBPOENAED WITNESSES

Dr. Irving Lyon
Marilyn Ditty
Jan Goodwin
Rex Ehling
William Mecham
Carolyn Logue
Charles Fleming
John Kearns
Mary F. Reed
Wilma R. Bloom
George Caravalho

Intervenors' prefiled Written Testimony of Dr. Sheldon Plotkin was placed into the record on September 24, 1981 following Tr. 10,313.

APPENDIX B

LIST OF EXHIBITS

BOARD EXHIBITS

No.	EXHIBIT
1	Letter of October 15, 1981 from M. Sanders of FEMA to the Board responding to Board Questions
2	Letter of October 15, 1981, from M. Sanders to the Board Re: Medical Services
3	Letter of November 16, 19891 from NRC Staff Counsel to the Board Re: Medical Services
4	Letter of November 16, 1981 from Applicants' Counsel to the Board Re: Medical Services
5	Letter of November 19, 1981 from FEMA Counsel to the Board Re: Medical Services

NRC STAFF EXHIBITS */

No.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
10	Infant Mortality Date By Date Years (± 2 Standard Deviations)	7708	-
11	Interim Findings and Determination Relating to the Status of State and Local Emergency Preparedness for the San Onofre Nuclear Generating Station (Units 2 and 3) dated June 3, 1981	10413	10419
12	Safety Evaluation Report related to the operation of San Onofre Nuclear Generating Station, Units 2 and 3, NUREG-0712, Supp. 3	10649	10650

*/ Staff Exhibits 1-9 were admitted during the hearings on the geology/seismology issues. Staff Exhibit 13 was admitted during the hearings on the Applicants' Alternative Motion for an Operating License for Fuel Loading and Low Power Testing.

APPLICANTS' EXHIBITS **/

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
51	Emergnecy Plan for San Onofre Nuclear Generating Station, Units 2 and 3, April 1981	6902	6903
52	State of California, Nuclear Power Plant Emergency Response Plan, as revised August 1978, prepared by the State Office of Emergency Services and the State Department of Health (now Department of Health Services)	6902	6903
53	Orange County Emergency Response Plan, San Onofre Nuclear Generating Station, December 1980, as adopted by the Orange County Board of Supervisors, Resolution No. 80-2061, December 16, 1980	6902	6903
54	Unitied San Diego County Emergency Services Organization, Nuclear Power Plant Emergency Response Plan, December 1980, as adopted by the San Diego County Board of Supervisors, Resolution No. 10, December 9, 1980	6902	6903
55	City of San Clemente, California, Radiological Emergency Response Plan Annex to the City's Emergency Operations Plan, San Onofre Nuclear Generating Station, March 1981, as adopted by the San Clemente City Council Action No. 52, February 18, 1981	6902	6903

**/ Applicants' Exhibits 1-50 were admitted during the hearings on the geology/seismology issues; Applicants' Exhibits 160-162 were admitted during the hearings on the Applicants' Alternative Motion for an Operating License for Fuel Loading and Low Power Testing.

APPLICANTS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
56	San Juan Capistrano Radiological Emergency Response Plan, San Onofre Nuclear Generating Station, December 1980, as adopted by resolution of the San Juan Capistrano City Council, January 6, 1981	6902	6903
57	Department of Parks and Recreation, Pendleton Coast Area Radiological Emergency Response Plan, San Onofre Nuclear Generating Station, December 1980	6902	6903
58	SOP for Emergency Response, Marine Corps Base, Camp Pendleton, California 1-79, as revised by Base Order P3440.1 Ch. 1, January 19, 1981	6902	6903
59	Interagency Agreement and Evacuation Procedure for the San Onofre Plume Exposure Pathway Emergency Planning Zone, December 1980	6902	6903
60	Siren Locations and Responsibility Table	6902	6913
61	Siren Signal Coverage Map	6902	6913
62	Training Memorandum 10-81	6902	6961
63	Training Memorandum 8-80	6902	6961
64	Training Memorandum 9-81	6902	6961
65	Training Memorandum 6-81	6902	6961
66	Emergency Response Pamphlet, 10 Mile EPZ	6902	7439
67	Emergency Response Information, USMC Camp Pendleton	6902	7440

APPLICANTS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
68	Newspaper Advertisement on Pamphlets Being Mailed	6902	7439
69	Example of Poster or Placard	6902	7439
70	Example of Telephone Booth Decal	6902	7439
71	Example of Telephone Director Insert	6902	7439
72	Listing of PIOs With Addresses, and Telephone Numbers	6902	7439
73	Emergency Media Center Floor Plan (Plan I)	6902	7439
74	Emergency Media Center Floor Plan (Plan II)	6902	7439
75	Prepositioned Supply Boxes for Orange County and Radiation Apparatus	6902	7439
76	PIO Radiation Training Outline (July 8, 1981)	6902	7439
77	Chart of Information Flow Offsite During a SONGS 2 and 3 Emergency	6902	7439
78	Examples of Press Releases, May 13 Exercise	6902	7442
79	Map of SCE Offices and Service Territory	6902	7442
80	CRT Screen Display, May 13 Exercise	6902	7442
81	SCE-GO Employee Bulletin, May 13 Exercise	6902	7442
82	Dr. Linnemann's Curriculum Vitae	6902	7715

APPLICANTS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
83	List of Operators of Nuclear Generating Stations Subscribing to RMC's Medical Support Services, With Chart	6902	7715
84	Qualifications and Backgrounds of F. G. Rocco and T. M. Linnemann	6902	7715
85	Chart Showing Agencies Represented at RMC Training, By Type of Agency and Number of Attendees	6902	7715
86	Complete List of Agencies Represented at RMC Training and Number of Person Days For Each Agency	6902	7715
87	Examples of Letters of Invitation to RMC Training	6902	7716
88	Agenda and Program, Orange County Training	6902	7715
89	Agenda and Program, San Diego County Training	6902	7715
90	Synopsis of Lecture Topics Used in RMC Training Seminars	6902	7715
91	Scenarios Used in RMC Training	6902	7715
92	Lists of Handouts Provided to Attendees of RMC Training	6902	7715
93	Typical EMAP Program of Instruction	6902	7715
94	List of Required Supplies and Equipment	6902	7715
95	South Coast Hospital Procedures for Handling Radiation Accidents	6902	7715
96	Tri City Hospital Procedures for handling Radiation Accidents	6902	7715

APPLICANTS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
97	San Clemente General Hospital Procedures for Handling Radiation Accidents	6902	7715
98	Umpire's Check List for RMC Drill	6902	7715
99	RMC's Umpire's Report of May 13, 1981 Exercise	6902	7715
100	Agreement Between Radiation Management Corporation and Southern California Edison Company, July 1, 1981	6902	7795
101	Radiological Emergency Mutual Assistance Agreement	6902	7821
102	Initial Notification Forms	6902	7821
103	Manual of Emergency Events - SONGS 1	6902	7821
104	Follow-up Notification Form	6902	7821
105	Selected Instances of Large-Scale Evacuation	6902	7871
106	Manual of Protective Action Guides and Protective Action for Nuclear Incidents	6902	7872
107	Sheltering vs. Evacuation as a Protective Action	6902	7871
108	Program for the Review, Revision and/or Development of Standard Operating Procedures	6902	7871
109	Organizations Contacted by NUS Corporation During the Course of Emergency Plan Development	6902	7871

APPLICANTS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
110	Log of Significant Events and Response During SONGS Radiological Emergency Response Exercise, May 13, 1981	6902	7871
111	NUS Program for Offsite Agency Training	6902	7871
112	NUS Table Cross-Referencing NUREG-0654 Evaluation Criteria to SONGS Offsite Emergency Response Plans	6902	7871
113	Response of NUS Corporation to Comments Contained in the "FEMA, Region IX/ Regional Assistance Committee Informal Review of the San Onofre Offsite Emergency Response Plan," dated April 27, 1981	6902	7871
114	Interagency Agreement and Evacuation Procedure for the San Onofre Plan Exposure Pathway Emergency Planning Zone, December 1980	6902	6903, 8027
115	Organizations Contacted by Wilbur Smith and Associates	6902	8027
116	Population Distribution By Sector	6902	8027
117	Summary of Evacuation Time Estimates	6902	8027
118	Comparison of Evacuation Time Estimates	6902	8027
119	Conditional Probability for Exceeding 200 Rem Whole Body Dose Versus Distance	6902	8229
120	Percent of Core Melt Sequences with Doses Less than 200 Rem Versus Distance	6902	8229
121	Final Report, Technical Studies, Ingestion Pathway Zone, Emergency Response Planning for Southern California Edison Company, February 1981	6902	7526

APPLICANTS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
122A	Emergency Operations Facility (EOF)	9143	9143
123	Poster - San Onofre & Bluffs Beach	6902	7439
124	Poster - San Onofre Surf Beach/ Trestles Beach	6902	7439
125	Poster - San Clemente Beach	6902	7439
126	Poster - Doheny Beach	6902	7439
127	Flyer - San Onofre & Bluffs Beach	6902	7439
128	Flyer - San Onofre Surf Beach/ Trestles	6902	7439
129	Flyer - San Clemente Beach	6902	7439
130	Flyer - Doheny Beach	6902	7439
131	Newspaper Advertisement re Pamphlet (run in August 1981)	7487	7488
132	Analysis of Time Required to Evacuate Transient and Permanent Populations From Various Areas Within the Plume Exposure Pathway Emergency Planning Zone, San Onofre Nuclear Generating Station, Revision 2	8034	8035
133	List of Significant Deficiencies Identified by FEMA/RAC	8078	8083
134	United Orange County/Cities Emergency Management Agreement Proposed for Adoption by City of San Juan Capistrano, September 1, 1981	8685	868[illegible]
135	Siren Coverage for Indoor Levels in Populated Areas of San Juan Capistrano, San Clemente, and Populated Areas of Orange County	8735	8745

APPLICANTS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
136	Orange County Automatic Teletype System	8767	8767
137	Orange County Maps of Mountaintop Transmitters	8767	8767
138	Curriculum Vitae - Mr. Donald Poorman	8767	8767
139	Capistrano Unified School District Operational Letter, dated October 1980	8790	8802
140	Capistrano Unified School District Emergency Guide, dated August 24, 1981	8790	8802
141	Letter from Orange County (T. Egan) to Anthony L. Palumbo, FEMA, Region IX, Director, Responding to FEMA/RAC Informal Comments, August 3, 1981	9034	9034
142	Offsite Dose Assessment Center (ODAC)	9144	9144
143	Emergency Response Plans for Ingestion Pathway	9144	9144
144	Applicants' letter, dated June 26, 1981, to Brian K. Grimes, NRC Staff, Office of I&E, and enclosures entitled "Corrective Actions Required to Address FEMA Determinations of June 3, 1981, and Summary of Planned Action"	9146	9147
145	Letter from James W. Hunt to Mr. Brian Grimes, dated June 26, 1981	9287	9290
146	Memorandum from Robert T. Jaske, FEMA, to Mr. Brian Grimes, dated July 14, 1981	9242	9243
147	Draft SOP for Emergency Media Center	9245	9247
148	Draft Emergency Information Handbook	9246	9247

APPLICANTS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
149	Progress Reports to FEMA a) Letter of July 16, 1981, K. P. Baskin to Ronald H. Sandwina b) Letter of August 14, 1981 K. P. Baskin to Ronald H. Sandwina c) Letter of September 15, 1981, K. P. Baskin to Ronald H. Sandwina d) Letter of September 16, 1981, Edward B. Rogin to Kenneth W. Nauman	10858	10860
150	Minutes of Meeting of Interagency Jurisdictional Planning Committee (June 10, 1981-September 11, 1981)	10859	10864
151	Responses to FEMA Evaluations By a) City of San Juan Capistrano b) City of San Clemente (2) c) County of Orange	10995	10995
152	Draft Standard Operating Procedures for Orange County, as of September 25, 1981	11102	11108
153	Draft Standard Operating Procedures for San Diego County, as of September 25, 1981	11102	11108
154	Draft Standard Operating Procedures for City of San Clemente, as of September 25, 1981	11102	11108
155	Draft Standard Operating Procedures for City of San Juan Capistrano, as of September 25, 1981	11102	11108
156	Draft Standard Operating Procedures for State Department of Parks and Recreation, as of September 25, 1981	11102	11108
157	Lesson Plan: One Day General Radiological Emergency Planning and Preparedness Training	11108	11111

APPLICANTS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
158	Lesson Plan: Three Day Offsite Radiological Monitoring and Assessment Training	11108	11111
159	Letter, dated September 9, 1981, to SCE, David F. Pilmer, from State of California, Department of Health Services, Erik Vold, regarding IPZ Plan and Procedures	11114	11120

INTERVENORS' EXHIBITS

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
1	Written Testimony of Sheldon C. Plotkin	-	-
2	Chapter 7 of the Final Environmental Statement related to the operation of SONGS 2 and 3, NUREG-0490, dated April 1981	9418	-
3	Table 7.4.4-4, Supplement to Draft Environmental Statement related to the operation of SONGS 2 and 3	9418	9477
4	U.C.S. Finding on NUREG-0490	9418	-
5	Article from "Geographical Review" on evacuation from a nuclear technological disaster	9419	-
6	Study done for the Office of Emergency Services by Science Applications Incorporated. (pages C-160 - 167)	9419	-
7	Assumption Lists Referred To In Testimony	9419	9483
8	Earthquake (human factors), pages 33 and 34	9419	9486
9	Los Angeles Federation of Scientists Findings (referred to in testimony)	9420	-
10	Working Study of Health Effects of Radiation From a Nuclear Accident Over a 22.5° Sector	9569	-
11	Cancer and Low Level Ionizing Radiation, Dr. Karl Z. Morgan, The Bulletin, Sept. 1978	9570	-
12	Fatal Radiation Syndrome from an Accidental Nuclear Excursion	9627	-

INTERVENORS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
13	Regional Assistance Committee (RAC) Review of the San Onofre Offsite Emergency Response Plans, dated April 27, 1981	10106	10441
14	Evaluation Findings San Onofre Nuclear Generating Station Offsite Emergency Response Plans Exercise, dated May 13, 1981	10106	10441
15	Interim Findings and Determination Relating to the Status of State and Local Emergency Preparedness for the San Onofre Nuclear Generating Station (Units 2 and 3), dated June 3, 1981	10106	-
16	Evaluation by State OES of Orange County Nuclear Power Plant Emergency Response Plan Using NUREG-0654 Criteria	10106	10211
16A	Letter of June 3, 1981 from Dr. Reed to Bert Turner, Emergency Services Coordinator of Orange County Emergency Services	10211	10211
17	Evaluation by State OES of San Diego County Nuclear Power Plant Emergency Response Plan Using NUREG-0654 Criteria	10106	10211
17A	Letter of June 2, 1981 from Dr. Reed to Jim Hunt, Emergency Services Coordinator, San Diego County, Office of Diaster Preparedness	10211	10211
18	Evaluation by State OES of San Clemente Nuclear Power Plant Emergency Response Plan Using NUREG-0654 Criteria	10106	10211
18A	Letter of June 2, 1981, from Dr. Reed to Ron Coleman, Emergency Services Coordinator, City of San Clemente	10211	10211

INTERVENORS' EXHIBITS (continued)

NO.	EXHIBIT	IDENTIFIED	ADMITTED INTO EVIDENCE
19	Evaluation by State OES of San Juan Capistrano Nuclear Power Plant Emergency Response Plan Using NUREG-0654 Criteria	10106	10211
19A	Letter of June 1, 1981, from Dr. Reed to Cynthia Ferguson, Office of Emergency Services, City of San Juan Capistrano	10211	10211
20	Evaluation by State OES of the Interagency Agreement and Evacuation Procedures (IAEP) Emergency Response Plan Using NUREG-0654 Criteria	10106	10211
21	Executive Summary for the California Disability Survey, Winter 1981	10106	10113
22	Memorandum Concerning Disabled Individuals and Emergency Preparedness, dated January 15, 1981	10106	10111
23	State of California Nuclear Power Plant Emergency Response Plan, dated July 1975 (revised March 1981)	10106	10135
24	Emergency Planning Zones for Serious Nuclear Power Plant Accidents, dated November 1980	10106	-
25	Evaluations by State OES of the State Parks and Recreation Emergency Response Plan Using NUREG-0654 Criteria	10212	10213
25A	Letter of June 3, 1981 from Dr. Reed to Jack P. Stowe, Manager of Pendleton Coast Area, State of California Department of Parks and Recreation	10212	10213