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November 23, 1982

Docket Nos. 50-361 OL
and 50-362 OL

Dr. Eugene L. Saenger
University Hospital
Cincinnati, Ohio 45267

Dear Dr. Saenger:

In accordance with our conversation of November 17, 1982, enclosed are copies of the Atomic Safety and Licensing Board's Orders of October 1 and 29, 1982 in the San Onofre Nuclear Generating Station, Units 2 and 3 proceeding. As we discussed, the NRC Staff is seeking to obtain the services of a physician to testify at an upcoming hearing in the San Onofre proceeding regarding arrangements for medical services to treat radiological contamination and exposure. In particular, testimony will be necessary to describe what contamination and exposure are, what resources (medical or otherwise) are necessary to treat each with consideration of the types of personnel and facilities required and the timeframe in which such resources must be brought to bear in order to be effective. With respect to specific resources in Southern California, I am planning to present a separate witness.

Although the foregoing testimony was to be filed (in writing) on December 24, 1982, and the hearing was scheduled to commence on January 11, 1983, the Commission, on November 19, 1982, suspended the hearing pending its resolution of certain issues pertaining to relevant portions of the Commission's regulations. The status of the schedule is thus uncertain. Nevertheless, I believe that it is necessary to continue preparation of testimony to assure that whatever schedule is finally set can be met. Accordingly, I will be in touch with you shortly to arrange a meeting with you to discuss the possibility of your participation. In the meantime, if you have any questions, I can be reached at (301) 492-8658.

Sincerely,

Lawrence J. Chandler
Deputy Assistant Chief Hearing Counsel

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

BEFORE ADMINISTRATIVE JUDGES

James L. Kelley, Chairman
Dr. Cadet H. Hand, Jr.
Mrs. Elizabeth B. Johnson

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

October 1, 1982

MEMORANDUM AND ORDER

(Setting Medical Arrangements Question for Hearing)

Introduction.

The Board has reviewed the submissions of the parties in response to our Memorandum and Order of August 6, 1982. The primary purpose of that Order was to determine whether further proceedings might produce a better evidentiary record on the need, if any, for advance medical arrangements for the offsite public in the San Onofre plume EPZ. Your submissions indicate that a further hearing would produce additional relevant information and provide an opportunity to explore points of disagreement on that question.

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We suggested the possibility of further proceedings based on affidavits, without a hearing. Your submissions did not support that approach. We also believe that a hearing, with an opportunity for cross-examination, is the best way to probe these rather complex issues.

The Board's General Approach.

We have chosen to approach this problem initially from the perspective of available medical resources in the San Onofre area. We assume a serious accident at San Onofre, beyond design basis, and a release of radioactivity to the atmosphere. We further assume cases among the public in the plume EPZ of severe contamination and of radiation injuries involving whole body doses in excess of 150 rems. We then ask the following questions:

- (1) What kinds of emergency medical services would be needed for the contaminated and/or irradiated accident victims?
- (2) To what extent would those medical services be readily available in the local area without advance planning?
- (3) At what point would local area resources be overwhelmed by numbers of accident victims?
- (4) How serious an accident would be required to overwhelm local resources?
- (5) What is the probability that a comparable accident might occur at San Onofre?
- (6) How can ready availability of local area resources be augmented by advance planning?

(7) What medical resources would be available from greater distances, but with longer delays?

We refine these questions below after first discussing two factors that limit this inquiry.

Emergency Medical Services.

We are concerned with whether there is a need for advance arrangements for emergency, medical services for members of the offsite public. The underscored words are limiting factors.

First, by "emergency" services we mean services that must be provided or administered immediately or soon after the accident in order to be effective. This would rule out, for example, psychiatric treatment. As a bounding time, we would regard as an "emergency" service one that must be available within 48 hours after an accident victim is contaminated or irradiated. Conversely, we assume that any medical service which would be equally effective if administered 48 hours or more following the injury could be provided on an ad hoc basis under virtually any accident scenario; no advance arrangements would be necessary.

Second, by "medical" services we mean the term in its customary clinical sense. We make a separate point of this because of the Intervenor's desire to include planning for health education, screening and counseling services, and similar non-clinical services of a community health nature. Comments at p. 2. It may well be that such services are important in the overall scheme of things, but we think they fit more logically under the heading of public education -- a topic we have already covered and which is now pending on appeal -- than under medical services.

Questions for the Parties.

All Parties should answer the following questions, providing expert testimony where the subject matter requires it.

1. Kinds of Medical Services. Describe in appropriate detail the kinds of emergency medical services that would be required for cases of severe contamination and of radiation doses involving upwards of 150 rems, whole body dose. In some cases, the same person may be both contaminated and irradiated. Consider requirements for the following types of personnel, equipment and medicine:

- a. Doctors
- b. Nurses and other health personnel
- c. Decontamination facilities, including monitoring equipment
- d. Hospital beds
- e. Testing facilities
- f. Potassium iodide; other medicines
- g. Ambulances or other transportation
- h. Other items

2. Local Resources. Some, most, or all of the required emergency medical services might be provided on an ad hoc basis -- i.e., without any advance arrangements by offsite planning authorities -- because the proof may show that resources are readily available in the local area and that time is not of the essence. By "local area" we mean the Southern California coastal area, including Los Angeles and San Diego. For example, the Applicants offered some data in their submission concerning the number of hospitals having nuclear medicine services (with numbers of beds and

associated oncologists) in the area. State in appropriate detail the extent to which the required services you listed in response to paragraph 1 could be provided on an ad hoc basis within about 48 hours or less following contamination or irradiation.

3. Maximum Capabilities of Local Resources. What are the approximate maximum numbers of accident victims local resources could cope with, assuming they are being strained temporarily to handle an emergency. For example, a doctor could increase his normal patient load and a hospital might add some temporary beds. At what numerical point would local resources, resource by resource, be not merely strained, but overwhelmed?

4. Accident Magnitude. Taking into account relevant variables, including quantity of the release, wind directions, and the like, how serious an accident would be required to produce the number of accident victims that would overwhelm local resources? Assume that evacuation and sheltering plans work substantially as expected, but bear in mind that evacuation will probably take three to seven hours in differing circumstances, and that sheltering does not afford complete protection.

5. Accident Probability. What is the approximate probability -- per reactor year and over the life of the facility -- that the accident described in response to question 4 might occur at San Onofre? Consider that there are three operating reactors there.

6. Advance Arrangements. How could the rapid availability of local area resources be augmented by advance arrangements by offsite emergency officials? "Arrangements" is used here in a broad sense to include not only determining the location of existing facilities and trained personnel, but also, for example, provision of additional training to health

personnel. As we have made clear previously, however, these arrangements would not include large new capital expenditures for new facilities. Be specific as to each category of medical service.

Has it been determined whether local hospitals will accept low income accident victims who cannot meet usual credit standards? Presumably their expenses will be paid later under the Price-Anderson Act mechanism.

7. Availability of Distant Medical Services. Would it be possible to draw upon more distant medical services -- beyond the Los Angeles and San Diego areas -- if local resources were overwhelmed? Could this be done in a timely manner for radiation patients in need of hospitalization? What advance arrangements are necessary or desirable with respect to distant medical services?

Other Questions.

1. All parties. Is the phrase "contaminated injured individuals" as used in 10 CFR 50.47(b)(12) a term of art with a clearly defined meaning? If so, state that meaning and cite scholarly treatises or articles illustrating term of art status. If this phrase is not a term of art, does it have any clear meaning derivable from the rulemaking record or elsewhere?

2. For the Applicant. What kinds of accidents was Dr. Linnemann assuming might occur when he expressed doubt at the prior hearing that "anyone offsite would receive anywhere near a dose of radiation resulting in symptoms of radiation sickness, much less a hospitalization dose?" (Tr. 7086-87) Did any of his assumed accidents exceed the design bases for San Onofre?

3. For the NRC Staff. In Supplement 6 to the SER at p. 13-3, you state that -- "in worst case accidents, if one postulates large numbers of high radiation exposures, the effects are such that a number of days are available before treatment is needed and ... during this time ad hoc plans for transportation to hospital beds anywhere in the U.S. could be carried out."

Provide the technical medical basis for your statement that "a number of days are available before treatment is needed."

If an ad hoc response might require transporting victims "anywhere in the U.S.," might not advance planning be preferable if that could keep people closer to home?

On the basis of the latest submissions, the Staff and FEMA appear to disagree about many aspects of this question. The Staff, in cooperation with FEMA, should isolate the separate elements of disagreement in terms of services involved and whether they are available ad hoc. The technical basis for any points of disagreement should be identified.

We expect the staff to present technical witnesses at this hearing, including a medical witness. FEMA indicates in its September 3, 1982 memorandum that it could present experts to clarify or reaffirm its positions. We hope it will do so.

Filing Dates and Hearing Location.

The Applicants and the Intervenors shall have their testimony in the Board's hands (note our separate addresses) by November 10, 1982. The

NRC Staff, in cooperation with FEMA, will have an opportunity to review and comment on the Applicants' and Intervenors' testimony. The Staff shall have its testimony in the Board's hands by November 19, 1982.

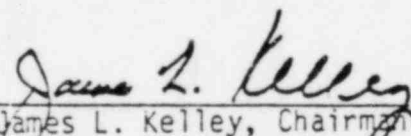
The hearing will be conducted somewhere in Southern California beginning on November 30, 1982. The exact time and place will be determined in consultation with the parties at a later date. We expect the hearing to last two to four days.

We will discuss further arrangements for the hearing with the parties by telephone during October.

Certification to the Commission.

As you know, the Commission has recently directed the Appeal Board to certify to it two questions concerning the interpretation of 10 CFR 50.47(b)(12), without making reference to the related issues pending before this Board. That development indicates that the Commission might decide those questions before these further proceedings can be concluded and therefore without taking their results into account. In order to avoid a possible substantial waste of resources, we will shortly certify to the Commission the question whether it wishes us to terminate or continue these proceedings.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD


James L. Kelley, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 1st day of October, 1982.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

BEFORE ADMINISTRATIVE JUDGES

James L. Kelley, Chairman
Dr. Cadet H. Hand, Jr.
Mrs. Elizabeth B. Johnson

In the Matter of

SOUTHERN CALIFORNIA EDISON COMPANY,
ET AL.

(San Onofre Nuclear Generating
Station, Units 2 and 3)

ASLBP Docket No. 78-365-010L

Docket Nos. 50-361-OL
50-362-OL

October 29, 1982

MEMORANDUM AND ORDER
(Ruling on Objections to Prehearing Order)

The Applicants have filed objections to our prehearing Order of October 1, 1982, setting the medical arrangements question for hearing. On the basis of those objections, the Applicants submit that no hearing should be scheduled until the Commission has decided the certified questions now pending before it. The NRC Staff has filed a response supporting most of the Applicants' objections. We have received no comments from the Intervenors.

Summary. We have considered the Applicants' and Staff's objections, and we are making certain clarifications and changes in the October 1 Order in response, as described hereafter. However, we are rejecting most of

these objections, and we find no sufficient reason to postpone the hearing until after the Commission decides the certified questions. As we stated in certifying the postponement question to the Commission, we intend to go ahead with this hearing unless the Commission tells us to stop.

Clarifications and Changes.

Probability and Consequence Evidence. Questions 4 and 5 of the October 1 Order call for information about accident consequences and probabilities. The Applicants object that these studies "would necessitate a site specific accident analysis exceeding the plant's design basis as well as probability studies of such specific accidents." We are told that such studies would be "costly" and would "require much more time."

We did not expect that these questions would require the parties to do substantial additional data collection or analysis. We note once more that the Staff has already performed a pertinent probability analysis, as reflected in Table 7.4 of the San Onofre environmental impact statement. This work having already been done, we see no need for the parties to start from scratch on these issues. As acknowledged in our Initial Decision, the Staff believes that Table 7.4 "significantly overestimates the consequences of very improbable and very severe accidents" and that therefore Table 7.4 should not be used for emergency planning purposes. Tr. 10340-41.

However, as we also noted in the Initial Decision --

it does not follow that that Table ... should not be used at all for emergency planning purposes, particularly when we have nothing better to consider. We are not looking to the FES for precise quantifications of risk and consequences, but only for a rough approximation of radiation effects on the public in the event of a serious accident at San Onofre. 15 NRC at 1197.

We need only add that we should err in the direction of conservatism when the matter for determination is needed medical arrangements for the public.

In light of these considerations, we will accept as answers to questions 4 and 5 information derived directly from Table 7.4, at least as a starting point. No independent site-specific studies of the consequences and probabilities of accidents at San Onofre will be required of the Applicants or the Intervenors. The Staff's data base shall be made available to the parties. In addition, we are directing the Staff to provide in one document -- in addition to the explanation already in the FES and in the record -- an explanation of how the Table 7.4 data were arrived at, including analytical techniques and factual assumptions. Furthermore, if the Staff continues to believe that Table 7.4 is not appropriate for emergency planning purposes, then they are to provide (1) an explanation for that belief, and (2) a revised version of Table 7.4, representing their current best efforts to produce a Table of this kind that is appropriate for emergency planning purposes.

We are giving the lead role to the Staff in this area because of their past efforts and because they have more expertise in accident probability analysis than any other party. The other parties are invited to submit comments on the implications of Table 7.4 (and any revisions of it) for the issues before us, and the Staff's explanatory material. In addition, any party may, if it chooses, develop and present additional analysis and other evidence relevant to questions 4 and 5.

Related to the foregoing discussion, we are adding the following question and directing comments thereon:

8. Should emergency planning for offsite medical services arrangements at San Onofre be based upon the risks presented by accidents having more serious consequences and lower probabilities than those that would overwhelm local resources? If so, what is the lowest level of probability upon which arrangements should be based? What specific arrangements should be required at that level?

The interrelationships of most of our questions can be illustrated by a hypothetical example. The proof might show that hospital beds would be required for radiation injuries (question 1). There may be about 2000-3000 beds available in the area on an ad hoc basis at any time (question 2). Assuming that these hospital bed resources could be stretched in an emergency, that resource might be overwhelmed when accident victims requiring hospitalization exceed, say, 4000. Table 7.4 indicates that the probability of impact per year of an accident resulting in that number of persons being exposed over 200 rems is somewhat less than 10^{-6} (questions 4 and 5). (Presumably, however, that risk would be somewhat greater over the life of the facility.) At this point, a party might argue that any necessary medical services for accident risks having an approximate probability of 10^{-6} or greater can be provided on an ad hoc basis, without any advance arrangements, and rest its case. But another party might contend, in response to question 8, that risks presented by accidents having more serious consequences and lower probabilities should be the basis for arrangements for medical services.

If a party wishes to advocate that position, they should specify how remote a risk they believe should be the basis for advance planning, and what specific arrangements should be required.

Consideration of Unit 1. The Applicants and Staff object to our inclusion of Unit 1 in the consideration of accident risks. Whether Unit 1 should be included is debatable as an abstract proposition. The fact that we are not in the posture of licensing Unit 1 is not dispositive. However, the inclusion of Unit 1 would complicate the risk analysis, particularly now that we have decided to rely, at least initially, on FES Table 7.4, which does not consider Unit 1. We do not believe that exclusion of Unit 1 from this narrowly focused hearing would substantially affect the result. Therefore, we will only consider the risks posed by Units 2 and 3.

Extending Filing and Hearing Dates. The filing dates for the parties are extended, as follows: Applicants and Intervenors: December 15, 1982. NRC Staff explanation of Table 7.4 and any revision thereof: as soon as possible, and no later than December 1, 1982. The remainder of the Staff's direct case is due on December 24, 1982. The hearing will begin on January 11, 1983.

These extended filing dates should give the parties ample time to prepare their direct cases. We previously cautioned them to keep working while we were considering the extension now being granted. Unless the hearing goes forward as now scheduled, we may be unable to complete the hearing process before the Applicants' 6-month grace period expires. Accordingly, no further extension of these dates is contemplated.

Remaining Objections.

The Applicants complain that our Order calls for evidence in excess of that indicated in the Initial Decision. On the contrary, our Order is fully consistent with the Initial Decision. If we have added anything to what was explicit there, it is the implicit element of the extent of medical resources in the area that might be available on an ad hoc basis. The Applicants and the Staff have repeatedly insisted -- without any proof and contrary to the regulatory language (see 15 NRC at 1187) -- that an ad hoc approach is all that is necessary for San Onofre. We simply want to find out if they are correct. If they are, then presumably no prior medical arrangements are necessary under 10 CFR 50.47(b)(12) because they would not be "significant for the plant in question," under the general "escape clause" provision, 10 CFR 50.47(c)(2).

The Applicants and Staff criticize the Order as calling for site specific, single accident analysis. The latter point is academic, since we have stated our willingness to rely on the Table 7.4 data, which represents a range of different accidents at San Onofre. We are calling for a site specific analysis because that seems to be the only reasonable way to apply the present regulation. If the Commission had drafted it differently -- such as by specifying medical arrangements (as they specified the radius of the 10-mile EPZ), or by specifying the level of accident risk at which to require arrangements -- our task would have been easier and more mechanical. But the present regulation only tells us, in effect, to provide for adequate medical arrangements. That is an inherently site specific inquiry, depending not only upon accident risks,

but also population densities in the area. There are significant population densities near San Onofre, including about 100,000 residents in the plume EPZ. See 15 NRC 1169-71.

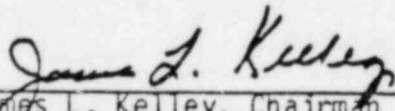
The Applicants (but not the Staff) baldly assert that our question 7 about distant medical resources exceeds the requirements of 10 CFR 50.47(b)(12), but they do not say why. We reject this objection summarily.

Finally, the Applicants and the Staff object to our allegedly "duplicative briefing" requirement in asking them whether the phrase "contaminated injured individuals" is a term of art. They claim that the Commission's certified questions cover the same ground. This objection has no merit. If the Applicants and Staff are correct and our question is merely duplicative, they would only need to state that fact and serve this Board with a copy of their comments to the Commission. They have already done that, however, and we find no discussion in their papers of the question we have raised. Moreover, as matters now stand, our hearing may take place before the Commission answers the certified questions. If that happens, the parties' answers can be helpful to the Board.

Prehearing Conference. We question from our perspective whether a prehearing conference on this narrowly focused hearing is necessary. However, we would consider scheduling a conference if the parties believe that would be useful. In that regard, Counsel should contact the Board Chairman as soon as possible.

In view of the pendency of our certified question before the Commission, we are providing a copy of this Memorandum and Order to the General Counsel.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD


James L. Kelley, Chairman
ADMINISTRATIVE JUDGE

cc: Leonard Bickwit,
General Counsel

Dated at Bethesda, Maryland,
this 29th day of October 1982.