

12/22/81

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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



NRC STAFF'S RESPONSE TO LICENSING BOARD'S ORDER OF DECEMBER 10, 1981

On December 10, 1981, the Atomic Safety and Licensing Board issued its Order (Calling For Comments on Earthquake Swarm). In this Order, the Board invited the comments of the Staff and Intervenors on the technical significance of reports submitted by Applicants regarding a recent swarm of earthquakes near the San Onofre site. In addition, the Board directed all parties to comment on the following questions:

- (a) Should the Applicants' reports be included in the record on seismic issues?
- (b) Which of your proposed findings now pending before the Board would be affected by reopening the record for this and possibly other information about the earthquake swarm?
- (c) Does the earthquake swarm constitute good cause to reopen the record for further hearings?

Following are the NRC Staff's (Staff) comments on these questions.

I.

Under cover of letter dated December 11, 1981, Staff Counsel sent to the Board and parties (by Express Mail to Messrs. Pigott and Wharton),

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copies of the Staff's evaluation of the Applicants' reports on the earthquake swarm and of the Staff's evaluation of Applicants' report concerning information submitted by Mr. D. W. Phifer (see Order at 2). These evaluations are responsive to the Board's invitation to provide comments on the technical significance of Applicants' reports.

The first of these evaluations was prepared by Dr. Robert L. Rothman of the NRC Staff, whose professional qualifications are set out in the attached statement. The second evaluation was prepared by Mr. Anthony T. Cardone of the NRC Staff who appeared as a Staff witness in this proceeding and whose professional qualifications are already a part of the record. (following Tr. 5560).

## II.

(a) As a general matter, the Commission's Rules of Practice provide that only evidence which is relevant, material,<sup>1/</sup> and reliable, may be admitted in NRC adjudicatory proceedings. 10 C.F.R. § 2.743(c) Argumentative, repetitious, cumulative or irrelevant evidence may be stricken. 10 C.F.R. § 2.757; see also, 10 C.F.R. Part 2, Appendix A, V(d)(5) and (7). Of course, a board is "not bound to view proffered evidence according to its admissibility under strict application of the rules of evidence in judicial proceedings." 10 C.F.R. Part 2, Appendix A, V(d)(7) With this guidance in mind, the Staff offers the

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<sup>1/</sup> We would note that the concept of "materiality" is considered to be essentially the same as "of consequence" in the definition of "relevant evidence" in the Federal Rules of Evidence, Rule 401.

following comments regarding inclusion in the record of Applicants' reports.

The Staff does not dispute that these reports are generally relevant and we have no basis to question their reliability. Nevertheless, because of the microseismic character of the earthquake swarm as described in the Staff's evaluation, the Staff does not believe that this evidence is of significant probative value or that consideration of these events in the context of this proceeding would materially affect the Board's deliberations regarding any of the matters in controversy; thus it is not necessary for a full and true disclosure of the facts (10 C.F.R. § 2.743(a) and (c)). While "relevant" evidence is generally admissible, it may be excluded if its probative value is substantially outweighed by consideration of undue delay or waste of time. See, 10 Moore's Federal Practice § 403.13. This is a matter entrusted to the discretion of the Board upon a balancing of the probative value of the evidence against the "undue delay which its admission may engender." See, 10 Moore's Federal Practice § 403.02[4]. Accordingly, the Staff does not believe that the Applicants' reports need be included in the record on seismic issues.<sup>2/</sup> See also (c), infra, for discussion of standards for reopening, generally.

(b) If, however, the Board determines that it is necessary or desirable to reopen the record to receive information bearing on the

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<sup>2/</sup> Should the Board conclude that these reports should be received in evidence, we presume that it would also receive the reports submitted by the Staff and Intervenors.

earthquake swarm, the following findings, proposed by the Staff, may potentially be affected:

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(c) The standard for reopening a closed record is well settled. Kansas Gas and Electric Company (Wolf Creek Station, Unit 1), ALAB-462, 7 NRC 320, 338 (1978); see, Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-598, 11 NRC 876, 879 (1980). It requires, in relevant part (1) that the new information address a significant safety or environmental issue and (2) that had the new information been considered initially, a different result would be reached. Diablo Canyon at 879.<sup>3/</sup> With respect to a proceeding in which no initial decision has yet issued, such as the instant one, the later factor is only slightly altered - the new information must be of such a nature that it might affect the outcome of the proceeding. See, e.g., Public Service Company of Oklahoma et al, (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 804 (1979).

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<sup>3/</sup> The standard also requires that a motion to reopen be timely made. In the present circumstances, this factor is not relevant to the Board's inquiry. Also, in light of the fact that this question is being raised by the Board, we do not address the burden which the proponent of reopening must bear. We of course recognize the Board's discretion to reopen the proceeding on its own initiative if it believes that the circumstances warrant. See, Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 752 (1977).

Viewed in the context of the foregoing, while the new information - the earthquake swarm - does relate to a significant safety issue in this proceeding it does not affect the decision otherwise compelled by the record. The Staff, as more fully articulated in its evaluation, has concluded that the earthquake swarm "does not provide any new information which causes us to change our position on the capability of faults in the area or on the vibratory ground motion as stated in the SONGS Units 2 and 3 Safety Evaluation Report and at the Atomic Safety and Licensing Board hearing." Memorandum for Darrell G. Eisenhut, Director, Division of Licensing, NRR, from Richard H. Vollmer, Director, Division of Engineering, NRR, dated December 8, 1981, transmitting Geosciences Branch review. Furthermore, as the Staff stated in its evaluation of the Applicants' reports:

Due to the proximity of these features, the horizontal uncertainty of the master event location (1 km) and the horizontal dimension of the cluster (2 km) the epicenters cannot be unequivocally associated with either zone. The OZD and the projected CZD in that area are nearly parallel so that the strike of the focal mechanism fault plane does not help in determining in which if either of these zones the earthquakes occurred. The earthquake epicenters appear in a cluster; there is no evidence that they delineate any known or hypothesized fault or structure. Since the earthquakes occurred at depths of several kilometers, trying to correlate them with surface expressions of structure may not be very useful for making estimates of fault capability. The earthquakes in the swarm were small ( $M_L \leq 3.0$ ) and in this region of relatively low seismicity, earthquake swarms like the one of November 6-9, 1981 are not unusual. Historically there have been at least six earthquakes in the vicinity of the swarm area. The two largest of these had magnitude of  $M_L = 3.5$  and  $M_L = 3.4$ .

Based on the above we conclude that this swarm of earthquakes occurred somewhere in the vicinity of the OZD and the CZD where these two zones are very close to each other and the precise location remains subject to some uncertainty due to the limitations inherent in the science of seismology. These earthquakes, however, occurred in a region where such swarms have occurred previously and their proximity to the OZD is typical of other earthquakes which have occurred in the area. The occurrence of these earthquakes does not provide evidence to cause us to consider the CZD as being capable.

(Evaluation at 3-4).

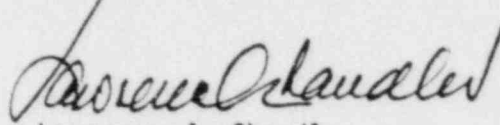
Consequently, it is the Staff's position that consideration of this information would not affect the conclusion reached on the matters in controversy before this Board. Indeed, because of the uncertainties associated with the epicenter locations and the fact the occurrence of such events is considered not to be unusual, it is not likely that a hearing on the earthquake swarm would contribute to the development of a sound record on any of the matters in controversy. Stated otherwise, the information presented in these reports does not have major significance for plant safety. See, Vermont Yankee Nuclear Power Corporation (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358, 364-365 (1973), and ALAB-138, 6 AEC 520, 523-524 (1973). For this reason, the Staff believes that it is not necessary to reopen the record for a further hearing pertaining to the earthquake swarm.

### III.

For the foregoing reasons, the Staff recommends (1) that the new information relating to the earthquake swarm near the San Onofre site not

be included in the record of this proceeding and (2) that there is no need to reopen the record for a further hearing on this matter.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Lawrence J. Chandler".

Lawrence J. Chandler  
Deputy Assistant Chief Hearing Counsel

Dated at Bethesda, Maryland  
this 22nd day of December, 1981

ROBERT L. ROTHMAN  
GEOSCIENCES BRANCH  
DIVISION OF ENGINEERING  
U. S. NUCLEAR REGULATORY COMMISSION

My name is Robert L. Rothman. I am presently employed as a Seismologist in the Geosciences Branch, Division of Engineering, Office of Nuclear Reactor Regulation, Washington, D.C. 20555.

PROFESSIONAL QUALIFICATIONS

I received a B.S. degree in Geology from Brooklyn College and M.S. and Ph.D. degrees in Geophysics from the Pennsylvania State University.

I have been employed by the NRC since October 1979 as a Seismologist in the evaluation of the suitability of nuclear power plant sites. My areas of expertise include seismicity, rupture mechanics, seismic wave propagation and seismic instrumentation. I am now or have been responsible for the seismological safety review of approximately ten nuclear power plant sites.

From 1975 through 1979, I was employed by the U. S. Air Force Technical Applications Center as a Seismologist in the nuclear explosion detection program. I was involved in several projects of this program both as a Technical Project Officer and as a researcher. These projects included the detection of and the discrimination between underground explosions and earthquakes, magnitude and yield relationship studies, seismic network detection and location capability studies, regional and teleseismic wave propagation studies and projects to operate seismic instrument arrays and automatic data processing and communications systems.

From 1965 through 1970 I was employed as a Seismologist by the U. S. Coast and Geodetic Survey. In this position I was involved in studies in the areas of engineering seismology, seismicity and earthquake aftershock sequences. This work was performed as part of a program to investigate seismic hazard in the United States.

From 1959 to 1961 and during 1964-1965 I was an Engineering Geologist with the New York State Department of Public Works. In this position, I conducted geophysical field surveys in support of construction projects such as bridges, buildings and highways.



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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S RESPONSE TO LICENSING BOARD'S ORDER OF DECEMBER 10, 1981" 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, or as indicated by a double asterisk by express mail service and by triple asterisk hand delivered on this 22nd day of December, 1981:

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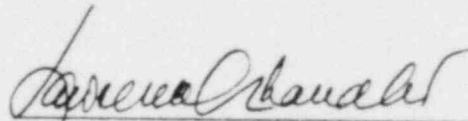
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