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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION



ATOMIC SAFETY AND LICENSING BOARD

BEFORE ADMINISTRATIVE JUDGES
James L. Kelley, Chairman
Elizabeth B. Johnson
Cadet H. Hand

Chandler / Hice / Fling
Vogler / Hesse
Wright / Chan
Rutberg
FF

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 2, 1981

ORDER
(Responding to the Commission's Order of September 18, 1981)

1. Appropriateness of the issue. The Commission's Order of September 18, 1981 directed this Board to provide an explanation of why we believe the root issue raised by our Orders of July 29, August 7, and September 14, 1981 is an appropriate issue in this case. We have attempted to address this question, either directly or indirectly, in our earlier orders. However, a brief summary of our reasons for raising the issue may provide a clearer perspective.

Before we can approve issuance of operating licenses for Units 2 and 3 of the San Onofre facility, we must find that the state of on and offsite emergency planning "provides reasonable assurance that adequate protective

No. 5 10-9-81

measures can and will be taken in the event of a radiological emergency." 10 CFR 50.47(a)(1). As we stated in our September 14 Order, "many aspects of emergency plans, particularly evacuation routes, are by their very nature site specific....And when, as here, a particular facility is built in a seismically active area, we read the rule as requiring us to consider the possible effects on emergency plans of a very large earthquake."

Order, p.10. Our basic concern is that if an earthquake larger than the safe shutdown earthquake for San Onofre were to occur, "substantial numbers of people might be trapped by the damaged highways in the populated areas of the EPZ and unable to evacuate until after some of them receive injurious or lethal doses of radiation." Order, p.2. We do not believe that we can make the "reasonable assurance" finding about the adequacy of the Applicants' plans until we have before us the specific information about this earthquake hazard called for in our September 14 Order.

In addition to what we have said in our earlier orders on the question of appropriateness, we also think it significant that the determination of the correct "safe shutdown earthquake" is an inherently uncertain matter, much more uncertain than many design and other determinations boards are called upon to make. Indeed, if that determination were relatively simple and straightforward, we would not have spent 25 days in hearings, generating some 7,000 pages of testimony, to reexamine the safe shutdown earthquake for San Onofre. As reflected in that record, seismic experts agree that more data -- particularly on near-field ground motion -- would be desirable; and there are sharp disagreements among those experts over how the limited data available should be interpreted. Given these considerations, we do not think that the safe shutdown earthquake concept

should be uncritically extended from design requirements to emergency planning requirements to bar any consideration of larger earthquakes in the planning process for individual facilities. Emergency plans should be a "failsafe" mechanism if the safe shutdown earthquake determination turns out to be wrong.

2. Criteria for acceptability. The Commission's Order also directs us to provide an explanation of the criteria we intend to use to judge acceptability or adequacy of emergency plans with respect to the earthquake and accident we have postulated.

(a) General criteria. We earlier quoted the overall criterion applicable here -- the finding required by 10 CFR 50.47(a)(1) that the plans give "reasonable assurance" about "adequate protective measures" being taken. In addition, to the extent they are applicable to the problem we have raised, we would apply the more specific standards in subsection (b). And we would consider the additional standards in NUREG-0654, which embody the expert judgment of the NRC Staff and FEMA. However, these standards do not address the kind of site-specific problem that confronts us here, where evacuation may be delayed for a long time, and the only other substantial protective action -- taking shelter -- may not be effective, either because sheltering is only effective for a few hours, or because of earthquake damage to shelters, or both. In such a case, a board needs some additional criteria in order to determine adequacy. As explained below, certain helpful corollary criteria are fairly inferable from the "reasonable assurance" and "adequacy" criteria, and from the overall emergency planning context.

(b) Planning responsibilities decrease with decreasing accident probabilities. As indicated in many regulatory contexts, including the probability-based, 10-mile plume exposure pathway EPZ for emergency plans (10 CFR 50.47(c)(2)), there is a relationship between "adequacy" of emergency plans and accident risk; levels of risk, in turn, depend both upon consequences and probabilities. Plans should be fully adequate to deal with accidents and consequences that are reasonably to be anticipated. At the other end of the spectrum, we do not believe that full scale emergency planning is necessary to deal fully with the possible consequences of a very low probability-high consequence accident. For example, the final environmental statement in this case postulates a very remote possibility of accident dose levels from San Onofre that might cause 30,000 fatalities and 100,000 people to receive whole body doses of more than 200 rems. See FES at Table 7.4, NUREG-0490. Full scale planning for such a scenario might suggest to some a need for additional medical facilities, staffs and logistical support, standing by waiting for the accident to happen. Perhaps this is what the Applicants have in mind in suggesting that the Board's approach will require them to make "massive expenditures" on a "new emergency plan." Memorandum in Support of Certification, pp. 3-4. That is not what we have in mind.


(c) Cost. As a corollary of the preceding point, costs to the Applicant can be considered, under a rule of reason, in determining the adequacy of emergency plans for remote contingencies. This is in contrast to the general rule for reactor design requirements, which must be met regardless of cost.

(d) Possibility of fatalities and injuries. We agree with the Staff that "in the worst case accidents (from whatever scenario) fatalities cannot be ruled out even with emergency preparedness measures that fully meet the Commission regulations." Affidavit of Brian K. Grimes, dated August 4, 1981. It appears that such worst case accidents were factored into the generic emergency planning rules to some extent (see NUREG-0654, pp. 6-7), and need not necessarily be reexamined in individual cases. We also believe, however, that if a particular case presents a significant, atypical risk -- for example, a seismic risk that could take away both the evacuation and sheltering options -- a board should take a close look at it; such atypical risks are unlikely to have received careful scrutiny in the development of generic planning standards. And if a plan is to be approved notwithstanding such a risk, a board should fully acknowledge that fact, in terms of possible fatalities and injuries, in making its adequacy determination.

(e) Best efforts. We do not yet know the full dimensions of this site-specific problem, and therefore we also do not know whether any specific additional planning should be done. As we have stressed before, we are only at the stage of finding out. But we must reject, at least until we do find out, arguments that our concerns do not even have to be considered, and that wholly ad hoc responses will be adequate. The record indicates that some useful additional planning steps might be taken -- for example, more detailed consideration of how the Marines at Camp Pendleton might assist in an evacuation. See Order of September 14, 1981, p.5,

note 3. We believe that such possibilities should be explored on the record, and that the Applicants should be required to meet a "best efforts" planning standard.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD


James L. Kelley, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, MD,
this 2nd day of October, 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
SOUTHERN CALIFORNIA EDISON) Docket No.(s) 50-361
COMPANY, ET AL.) 50-362
)
(San Onofre Nuclear Generating)
Station, Unit Nos. 2 and 3))
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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this
5th day of Oct 1981.

Peggy H. Lawring
Office of the Secretary of the Commission

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NUCLEAR REGULATORY COMMISSION

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SOUTHERN CALIFORNIA EDISON COMPANY, ET AL)

(San Onofre Nuclear Generating Station,)
Units 1 and 2))
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Docket No.(s) 50-361OL
50-362OL

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