



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

April 20, 1982

OFFICE OF THE  
COMMISSIONER

MEMORANDUM FOR: Director, PE  
General Counsel

FROM: John Ahearne *J. Ahearne*

SUBJECT: DIRECTOR'S DENIAL OF 2.206 RELIEF FOR  
SAN ONOFRE PETITIONS (SECY-82-63)

I would like to discuss with you or your staff the attached questions regarding this Secy paper.

Attachment

cc: Chairman Palladino  
Commissioner Gilinsky  
Commissioner Roberts  
Secy

1. Footnote 1 (p. 3) of 82-63 describes a November 13th FEMA letter.
  - (a) Shouldn't it be attached, at least to the Secy?
  - (b) If it covers the open items, shouldn't it be included as an addendum to the Director's response? (Perhaps with a cover sheet from Denton?)
  - (c) The quoted section attributes "great progress" to SCE, but does not give a FEMA judgment that the capability is now adequate or that the proposed actions are adequate to resolve the inadequacies. Has FEMA made such a judgment? If not, isn't the existing FEMA finding one of inadequacy? Has the November 13th letter affected the staff's conclusions on pages 14-15 of the Director's decision? Note that the California Residents denial (p. 14) refers to a "final determination" expected to be made by FEMA in mid-November 1981 and, presumably, therefore not incorporated in the Director's decision.

2. Appendix A of Attachment 1 (California Residents denial):

For Item 2 (p. A-1), FEMA recommends relocating the interim EOF. The response indicates SCE did not do so. How does this SCE action satisfy FEMA's concerns?

3. Attachment 3 (Nader denial): On page 3 the Director states that "[t]he staff has performed a brief review of the Executive Summary of the lengthy report." Why is a brief review of an executive summary adequate?
4. With regard to the appropriate earthquake to size the SONGS, the denial on pages 7-10 refers to NRC staff and SONGS applicants work and conclusions, but does not describe the USGS position. Does the USGS have a position?
5. The SER includes many areas where the staff has not completed review. Do you have a list of when those reviews will be completed?
6. The Director's denial states that (p. 10):

"the staff concludes that short term operation at San Onofre Unit 1 . . . is acceptable under the following conditions:

SEP 2

(1) Structural upgrading . . . is to be completed by June 1, 1982 . . .

(2) Results of seismic analysis of structures are submitted . . . by January 31, 1982. . . .

- (a) Will the bracing referred to in (1) be completed by June 1?
- (b) Since the seismic analyses have not yet been submitted, how is the above condition (2) to be interpreted?
- (c) The Director's decision concluded that the East Feedwater Heater Platform weaknesses were not sufficiently important so as to require changing (see SER, pp. 7-8). However, the March 2, April 2, and April 9 NRP letters attached to the April 9 OPE memorandum indicate a level of concern not reflected in the SER. Should the East Feedwater Heater Platform also be braced?

SEP 2  
9/30/82

MSLB  
original SER  
SEP 2

The following questions are related to the interim seismic adequacy presented in the staff SER:

7. Page 5, fourth paragraph: With regard to the staff's preliminary review of the containment sphere and reactor building analysis, the SER states:

" . . . these results appear reasonable and are consistent with results from audit analyses performed by NRC for structures of other SEP plants."

- o What is an audit analysis?
- o What are the bases for judging whether the results are consistent? What types of structures are compared to the containment sphere and reactor building at San Onofre 1?

8. Page 6, second paragraph: This seems to rely on the ratio of the two zero period accelerations (ZPAs):

- o Consider the effects due to soil/structural interactions. Does the same ratio between two ZPA's carry throughout the frequency range for two

different floor response spectra? As the load changes, the equivalent spring constants can be expected to change since the soil stiffnesses are functions of loads. This in turn can shift the peak frequencies. Does the staff (or licensee) assume that the soil properties remain constant throughout the potential load range?

- o Consider the component stress resultants at any given elevation due to two sets of spectral accelerations. Even if the floor spectral acceleration ratio remains constant for the two spectra for the whole frequency range, these resultants may not maintain the same ratio. What kind of analyses were performed to justify the linear extrapolations?
9. Pages 6, 7, and 10: With regard to the seismic resistant capabilities of masonry walls in the facilities, what is the criteria for assessing whether these walls would collapse? Is bracing used to prevent them from collapsing?
  10. Page 10: Apparently the licensee made a detailed inelastic analysis which shows maximum mid-span deformations of up to 10 inches. Has the staff checked the correspondent strain at the mid-span? Does the staff expect much inelastic behavior for this type of construction? Will the walls crack at this strain level? (A ten inch displacement of a masonry wall seems very large.)
  11. Pages 10 and 11: Regarding the column to foundation anchorage capacities, what criteria are used to determine that these anchor bolts are capable of resisting accelerations of 0.39 to 0.48 g? Do these accelerations consist of contributions from both horizontal and vertical components of the earthquake? Has the inelastic behavior been considered in estimating the anchor bolt capacities? If yes, was the inelastic, ductile behavior reflected in the column/frame analyses?
  12. Attachment 1, page 3: The denial states:

"Portions of the Turbine Building Complex were originally designed as Category B structures (0.2 g Static) yet they contained systems and components necessary for safe shutdown and accident mitigation, i.e. Category A systems and components." (In fact, collapse of the North Turbine Building Extension would impair a number of systems "thereby eliminating all methods for providing water to remove reactor decay heat." SR, p. 7)

This suggest there was a mistake in classifying the Turbine Building Complex.

- (a) If not, please explain why not.
- (b) If so: How did it occur? Should not our review have picked this up? How was the mistake eventually discovered? What assurance do we have that other equally serious mistakes have not been made?