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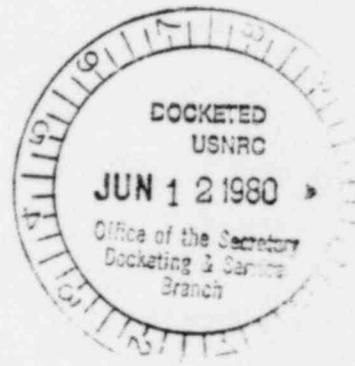
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June 11, 1980

John Ahearne, Chairman
Victor Gilinsky, Commissioner
Richard Kennedy, Commissioner
Joseph Hendrie, Commissioner
Peter Bradford, Commissioner
U.S. Nuclear Regulatory Commission
11th Floor
Washington, D.C. 20555



RE: Proposed Additions to the Record on
Seabrook Seismic Risks

Gentlemen:

Mr. Bickwit's letter to the parties of May 7, 1980, notified us of the Commission's desire to be briefed on two questions central to evaluation of the seismic risks at Seabrook. That briefing took place on May 29, 1980. The letter also invited the parties to identify any extra-record material that may have been presented during the briefing and to suggest appropriate steps for either its consideration or exclusion from the record.

In response to this invitation, NECNP proposes that the Commission include the following material in the record of the pending Seabrook proceeding:

1. M.A. Chinnery, "Investigations of the Seismological input to the Safety Design of Nuclear Power Reactors in New England," August 15, 1978. (Prepared for the Nuclear Regulatory Commission under Contract NRC-04-77-019).
2. M.A. Chinnery, "A Comparison of the Seismicity of Three Regions of the Eastern U.S.," Bulletin of the Seismological Society of America, Vol. 69, No. 3, pp. 757-772 June, 1979.
3. Verbatim Transcript, U.S. Nuclear Regulatory Commission Public Meeting, "Oral Presentations in Seabrook Seismic Issue," May 29, 1980.

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We propose that these be designated as Commission Exhibits No. 1, 2 and 3. Both of the documents authored by Dr. Chinnery were prepared under contract to NRC and were previously

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POOR QUALITY PAGES

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attached to "NECNP Supplemental Memorandum in Support of Petition to Review," served on all the parties on September 26, 1979. Additional copies for the convenience of the Commissioners are enclosed with your copies of this letter. These materials were not available at the time of the Licensing and Appeal Board proceedings. In our view, their consideration would have changed the outcome of the proceedings, because, properly understood, they answer the objections of the majority of the Appeal Board to Dr. Chinnery's method of predicting the occurrence of larger-than-historical earthquakes.

Particularly, the first document is an exhaustive catalog and analysis of the available scientific literature which evaluates the possibility of estimating the maximum possible earthquake that might be expected within a given region. It shows that no available method is satisfactory, nor is any founded on a sound physical base. It demonstrates that there is no evidence to support the conclusion that larger-than-historical earthquakes will not occur.

The second document compares earthquake activity in three regions of the U.S.: Southeastern U.S., Central Mississippi Valley and Southern New England. It represents a significant expansion of the testimony submitted by Dr. Chinnery at the original Seabrook hearings and a more detailed analysis of the data and explanation of the method. This study tests the linear extrapolation hypothesis against the historical record in the three regions and shows that the large earthquake in each region is entirely consistent with linear extrapolation from the record of smaller earthquakes.

Finally, during the oral briefing on May 29, 1980, Dr. Chinnery further explained his method. In addition, he explained that there is no valid method for predicting the occurrence of earthquakes in the Eastern U.S. from geologic and geophysical structures or phenomena. (Tr. 9)

It should be noted that the staff agreed with this. (Tr. 9, Tr. 31) Furthermore, during the briefing, the staff indicated a much greater degree of uncertainty with the basic rationale of the tectonic province approach than was appreciated by the Licensing and Appeal Board. For example, when asked whether a map of tectonic provinces exists, Mr. Reiter replied:

MR. REITER: We have a great deal of trouble with that, and we had -- the way the staff proceeds, we proceed in

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making decisions on each side as we go along, and we now presently have a research contract with some very imminent seismologists and geologists to attempt to draw -- to put together such a map. We originally asked the U.S. Geological Survey to help us put together such a map, and they tried, and with a great deal of difficulty, and they said they could not put together such a map.

We are trying again to put together such a map.

COMMISSIONER BRADFORD: Is the difficulty that there is no common definition of tectonic province?

MR. REITER: I think that might be it, and the difficulty is that tectonic province can be defined geologically, and the question is, what does that relate to seismologically? Essentially it is being used as an area of uniform earthquake source expectation, while it is being defined in terms of geology which can relate to something that is two or three million years old.

We are not sure how to relate those particular things.
(Tr. 35)

Furthermore, the staff agreed that probabilistic methodology is, in essence, the "wave of the future" in earthquake prediction:

I would like to offer a comment on that. Really it is an important question. I think the staff and many seismologists believe that a direction toward more probabilistic methods to give you a better estimate of the kind -- realistic estimate of ground motion you might expect at a site. (Tr. 61)

Appendix A is not specifically a probabilistic regulation. If we were to rewrite it and go to rulemaking on it, this is the kind of question that would be brought forward.1/ (Tr. 62)

1/ The speaker also offered his opinion that adopting a probabilistic method would have been inconsistent with "some of the individual interpretations of Appendix A to Part 100." (Tr. 62)

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We believe that the staff member is wrong in this, but the statement is particularly significant in that it suggests that some of the resistance to Dr. Chinnery's method may have been based not on its technical merit but on the staff's incorrect and inflexible legal reading of Appendix A. It would be ironic, indeed, if the lawyers had been dictating continuation of a technically questionable approach to seismic analysis. One must ask, if this is the staff view, why have they not gone to rulemaking?

Taken together, this material demonstrates:

1. For the Eastern U.S., there is a fundamental weakness in the tectonic province approach. Furthermore, there is no reliable method based on geologic and/or geophysical evidence, to understand or predict earthquake activity in this part of the county. Therefore, there is no justification for discrediting Dr. Chinnery's method on the basis that it is not dependent on identified geologic structures. Methods which are so dependent are not demonstrably more reliable than Dr. Chinnery's method. On the contrary, they may give the appearance of reliability while resting on no sound theoretical or physical basis.

2. Dr. Chinnery's probabilistic methodology is testable, empirically reliable, and the best available approach, certainly for the Eastern U.S. Moreover, it is essentially the state-of-the-art and represents the scientific trend in seismology. Had the Appeal Board appreciated this, we believe it would have ruled in NECNP's favor.^{2/}

There can be little question but that the Commission is free to accept this evidence now, so long as the other parties are given an opportunity to comment. As the Supreme Court recently stated:

But this much is absolutely clear. Absent constitutional constraints or extremely compelling circumstances "the administrative agencies' should be free

^{2/} We have deliberately not used this occasion to argue the meaning and interpretation of Appendix A. Our views, expressed in several pleadings before the Commission, are that App. A is sufficiently flexible to accommodate Dr. Chinnery's method. If the Commission accepts review, we will fully support this proposition.

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to fashion their own rules of procedure and to pursue method of inquiry capable of permitting them to discharge their multitudinous duties.'" Federal Communications Comm'n v. Schreiber, 381 U.S. 279, 290 (1965). Quoting from Federal Communications Comm'n v. Pottsville Broadcasting Co., 309 U.S. 134, 143 (1940).

* * *

We have continually repeated this theme through the years, most recently in Federal Power Comm'n v. Transcontinental Gas Pipe Line Corp., 423 U.S. 326 (1976), decided just two Terms ago. In that case, in determining the proper scope of judicial review of agency action under the Natural Gas Act, we held that while a court may have occasion to remand an agency decision because of the adequacy of the record, the agency should normally be allowed to "exercise its administrative discretion in deciding how, in light of internal organization considerations, it may best proceed to develop the needed evidence and how its prior decision should be modified in light of such evidence as develops." Id., at 333.

Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 11 ERC 1439, 1448-1449 (1978).

The Administrative Procedure Act grants an agency on appeal all of the powers which it had during the initial decision, 5 USC §556(b), including the authority to take new evidence, 5 USC §556(b)(1). In Seacoast Anti-Pollution League v. Costle, 572 F. 2d 872, 879 (1st Cir., 1978), the court specifically approved the Administrator's taking new evidence at the appeal stage, so long as basic due process was observed:

...[W]e can find no fault with the Administrator's decision to seek further evidence. Indeed we think this procedure was a most appropriate way to gather the necessary information without the undue delay that would result from a remand. (Id. at 879)

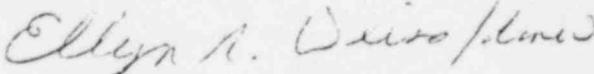
In this case, we would suggest that the Commission offer all parties the opportunity to file written comments

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on any extra-record material which other parties may request to be included in the record.

Very truly yours,

A handwritten signature in cursive script, reading "Ellyn R. Weiss".

Ellyn R. Weiss
Counsel for NECNP

ERW/lc

cc: Seabrook service list
Leonard Bickwit
General Counsel