



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

MAR 29 1983

MEMORANDUM FOR James P. Knight, Assistant Director
for Components & Structures Engineering
Division of Engineering

FROM: Robert E. Jackson, Chief
Geosciences Branch
Division of Engineering

SUBJECT: ACRS CONSULTANT P. POMEROY'S COMMENTS ON NRR CHARLESTON
PLAN

As a result of his review of the DE Charleston Plan for the ACRS Subcommittee on Catawba, Dr. Paul Pomeroy, an ACRS consultant on seismology, has forwarded his comments on this plan to the subcommittee chairman and its impact on Catawba (attached).

In general, he indicates that the plan postpones consideration of changes in licensing procedures for three years in the hope that proposed programs will produce definitive results. He considers this inappropriate and recommends that the ACRS take a leadership role in resolution of the Charleston problem. Although there may be some philosophical difference between Dr. Pomeroy and the staff on the urgency of the issue and interpretation of the USGS letter we feel that he may misunderstand some parts of the staff's plan. In addition, we plan to be examining hazard curves for these facilities in about one year and, if necessary we will be advising on the need for any specific actions at that time.

For example, with respect to his points:

- a. The staff believes that some hypotheses would allow a Charleston-sized earthquake to occur throughout a large percentage of the area of the eastern seaboard (for example, the decollement hypothesis). Other hypotheses would restrict a Charleston-sized event to a small percentage of the area (for example, hypotheses related to specific kinds and orientation of faults). A few hypotheses may restrict a Charleston-sized earthquake to the region around Charleston (any hypothesis that states that there is something geologically or seismically unique about Charleston).
- b. Many previous deterministic studies focused primarily on surface mapping with the intent of defining tectonic provinces. The results of these programs have indicated that there is little, if any, correlation between surface geological features and the location of epicenters. The proposed program is designed to discover causal mechanism of large eastern earthquakes by studying the tectonic features by geological and geophysical techniques at depths that the earthquakes are occurring. By correlating tectonic features and

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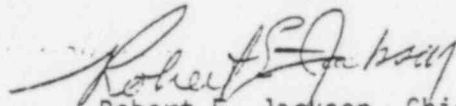
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location of hypocenters, along with information from other geophysical techniques, it is hoped that causal mechanism for eastern earthquakes will be identified. Each causal mechanism that can be identified should help decrease uncertainties associated with seismic hazard. However, Pomeroy's observation could be correct- maybe we won't reduce uncertainty but it seems that we have the obligation to keep trying.

- c. The purpose of the LLNL study is not to supply a catalog of possibilities with respect to different hypotheses as to the reoccurrence of the Charleston Earthquake, but rather to measure the uncertainty by allowing experts to present and weigh those hypotheses they consider appropriate. If one hypothesis is not considered or is assigned little weight, then that is a reflection of its credibility. This is an important element of this program. However, in addition to the LLNL study, NRC is also funding a study by the USGS to assess the impact of differing hypotheses without any measure of their credibility.

Dr. Pomeroy also indicated that the Charleston Issue should remain an Open Item for Catawba. As discussed in our internal position we clearly do not believe this is called for based on our present knowledge.


Robert E. Jackson, Chief
Geosciences Branch
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Attachment:
As stated

cc: R. Vollmer
GSB Staff
