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RELATED CORRESPONDENCE

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

July 26, 1984

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Administrative Judge
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Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Dr. Oscar H. Paris
Administrative Judge
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Washington, D.C. 20555

In the Matter of
GEORGIA POWER CO.
(Vogtle Electric Generating Plant, Units 1 and 2)
Docket Nos. 50-424 and 50-425 (OL)

Dear Administrative Judges:

In its "Response to Licensing Board Letter of July 12, 1984," the Staff accidentally omitted the final page (Page 3) of Enclosure 2 to the Memorandum dated March 2, 1983 from Richard Vollmer to Harold Denton that was attached to the Staff's Response. A complete copy of Enclosure 2, entitled "Interim Position on Charleston Earthquake for Licensing Proceeding," is enclosed. I apologize for any inconvenience the missing page may have caused.

Sincerely,

Robert G. Perlis
By BMB
Robert G. Perlis
Counsel for NRC Staff

Enclosure: As Stated

cc: (w/enclosure)
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Interim Position on Charleston Earthquake
for Licensing Proceeding

The NRR Staff position with respect to the Intensity X 1886 Charleston earthquake has been that, in the context of the tectonic province approach used for licensing nuclear power plants, this earthquake should be restricted to the Charleston vicinity. This position was based, in part, on information provided by the United States Geological Survey (USGS) in a letter dated December 30, 1980 from J. E. Devine to R. E. Jackson (see Summer Safety Evaluation Report). The USGS has been reassessing its position and issued a clarification on November 18, 1982 in a letter from J. E. Devine to R. E. Jackson. As a result of this letter, a preliminary evaluation and outline for NRC action was forwarded to the Commission in a memorandum from W. J. Dircks on November 19, 1982.

The USGS letter states that:

"Because the geologic and tectonic features of the Charleston region are similar to those in other regions of the eastern seaboard, we conclude that although there is no recent or historical evidence that other regions have experienced strong earthquakes, the historical record is not, of itself, sufficient grounds for ruling out the occurrence in these other regions of strong seismic ground motions similar to those experienced near Charleston in 1886. Although the probability of strong ground motion due to an earthquake in any given year at a particular location in the eastern seaboard may be very low, deterministic and probabilistic evaluations of the seismic hazard should be made for individual sites in the eastern seaboard to establish the seismic engineering parameters for critical facilities."

The USGS clarification represents not so much a new understanding but rather a more explicit recognition of existing uncertainties with respect to the causative structure and mechanism of the 1886 Charleston earthquake. Many hypotheses have been proposed as to the locale in the eastern seaboard of future Charleston-size earthquakes. Some of these

could be very restrictive in location while others would allow this earthquake to recur over very large areas. Presently, none of these hypotheses are definitive and all contain a strong element of speculation.

We are addressing this uncertainty in both longer-term deterministic and shorter-term probabilistic programs. The deterministic studies, funded primarily by the Office of Research of the NRC should reduce the uncertainty by better identifying (1) the causal mechanism of the Charleston earthquake and (2) the potential for the occurrence of large earthquakes throughout the eastern seaboard. The probabilistic studies, primarily that being conducted for NRC by Lawrence Livermore National Laboratory (LLNL) will take into account existing uncertainties. They will have as their aim to determine differences, if any, between the probabilities of seismic ground motion exceeding design levels in the eastern seaboard (i.e. as affected by the USGS clarified position on the Charleston earthquake) and the probabilities of seismic ground motion exceeding design levels elsewhere in the central and eastern U. S. Any plants where the probabilities of exceeding design level ground motions are significantly higher than those calculated for other plants in the Central and Eastern U. S. will be identified and evaluated for possible further engineering analysis.

Given the speculative nature of the hypotheses with respect to the recurrence of large Charleston-type earthquakes as a result of our limited scientific knowledge and the generalized low probability associated with such events, we do not see a need for any action for

specific sites at this time. It is our position, as it has been in the past, that facilities should be designed to withstand the recurrence of an earthquake the size of the 1886 earthquake in the vicinity of Charleston. At the conclusion of the shorter-term probabilistic program and during the longer-term deterministic studies, we will be assessing the need for a modified position with respect to specific sites.