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

W. Kane

10

MAR 03 1992

MEMORANDUM FOR: Darrell G. Eisenhut, Director
Division of Licensing

FROM: Richard H. Vollmer, Director
Division of Engineering

SUBJECT: RECOMMENDATION OF ASLB BOARD NOTIFICATION ITEM - POSSIBLE CHANGE OF POSITION BY U. S. GEOLOGICAL SURVEY ON THE LOCALIZATION OF THE 1886 CHARLESTON EARTHQUAKE - VIRGIL C. SUMMER NUCLEAR PLANT SITE

The Extreme External Phenomena Subcommittee of the ACRS sponsored a two day meeting (Jan. 28-29, 1982) to hear presentations by prominent earth scientists throughout the U. S. who are engaged in seismic and geologic research. During the seminar much time was spent discussing the geology and seismicity of the Charleston, South Carolina region. In past licensing decisions, the NRC has assumed, based primarily on recommendations from the U. S. Geological Survey (USGS), that the relatively high seismicity in the Charleston, S.C. area, including the 1886 Intensity X Charleston Earthquake would not recur anywhere but the Charleston area.

Geologic and seismic research, funded by the NRC and carried out by the USGS, has been ongoing in the Charleston area since 1973. In reviewing the V. C. Summer OL SAR, the NRC staff and the USGS considered all of the information available at that time and reaffirmed our original CP SER conclusion.

No significant new information was presented at the ACRS Subcommittee meeting that was not considered in the Summer evaluation, but the USGS stated that it was reviewing its position on the Charleston earthquake. The USGS review could result in one of the following three positions or some other alternative: (1) A Charleston-type event could only occur in the Charleston area - a reconfirmation of their past position; (2) A Charleston-type event is more likely to occur at Charleston than elsewhere, but is not unique to the Charleston area; (3) A Charleston-type event could occur throughout the eastern Seaboard as there is nothing unique to the Charleston area.

The NRC still supports its position stated in the V. C. Summer SER pending any new position statement by the USGS which we expect to receive in the future.

A more detailed discussion of the NRC staff position on this matter is presented in Commission Paper (SECY-82-53), a copy of which is attached. We will notify you immediately upon receipt of the USGS position. Since this issue appears to meet the guidelines of Office Letter No. 19, we recommend that you consider notifying the ASLB for the Summer site of this new information.

Richard H. Vollmer, Director
Division of Engineering

Enclosure:
As stated

cc w/encl:
H. Denton
J. Knight
R. Tedesco
A. Schwencer
R. Jackson
S. Brocoum
L. Reiter
S. Goldberg
W. Kane
R. McMullen
P. Sobel
E. Case

February 5, 1982

SECY-82-53

POLICY ISSUE
(Information)

FOR: The Commissioners

FROM: Executive Director for Operations

SUBJECT: POSSIBLE RELOCATION OF DESIGN CONTROLLING EARTHQUAKES IN THE EASTERN U.S.

PURPOSE: To provide the Commissioners with information relating to (1) possible modification of the U.S. Geological Survey position on the association of the 1886 Charleston, S.C. earthquake with geologic structure, and (2) the recent earthquakes in New Brunswick, Canada.

DISCUSSION: In the licensing of facilities in the Southeastern U.S., the NRC has maintained the position, based on the advice of the U.S. Geological Survey (USGS), that any reoccurrence of the 1886 Charleston, S.C. earthquake (Modified Mercalli Intensity (MMI) X, estimated Magnitude about 7) would be confined to the Charleston area. That is, the Charleston earthquake is assumed to be associated with a geologic structure in the Charleston area. Nuclear power plants in the region east of the Appalachian Mountains are, therefore, usually controlled in their seismic design, according to Appendix A to 10 CFR Part 100, by the maximum historical earthquake not associated with a geologic structure. This controlling earthquake is typically an MMI VII or VIII. Since 1974, the NRC has funded an extensive research project in the Charleston area to gain further information on the causative mechanism of this event.

On January 28 and 29, the Extreme External Phenomenon Subcommittee of the ACRS convened a meeting of expert professionals in the geosciences to obtain an overview of the state of knowledge and future NRC research needs. During that meeting, we were informed by the

Contact:
R. Vollmer, NRR
492-7207

USGS that they had formed a working group to reassess the validity of their position on the Charleston earthquake. They indicated that their tentative position concluded that the reoccurrence of a Charleston-type earthquake should not be considered unique to the Charleston area. It was further indicated their recommendation would be forwarded to the USGS Director in approximately one month and that a policy decision on the treatment of the Charleston earthquake would be made at the Director's level.

Any major modification of the former USGS position could have significant impact on many Eastern US nuclear plant sites because Appendix A to 10 CFR Part 100 could require an earthquake of this type, with its resulting high ground motion, to be assumed to occur at any location.

A meeting between the EDO and the Director, USGS, on licensing issues is planned for the near future. Further information may be available at that time.

New Brunswick, Canada, Earthquakes

On January 9-11, 1982, a series of earthquakes occurred in New Brunswick, Canada. The largest of these events was a Magnitude 5.7 earthquake which occurred on January 9, 1982. Because of its remote location, no damage was associated with this earthquake. In the past, however, events of such size have resulted in MMI VIII. Although all information relating to the size and location of this event is preliminary, it eventually may be concluded that this earthquake could have occurred anywhere within the New England Piedmont Tectonic Province and, in accordance with the Appendix A to 10 CFR Part 100, would represent the largest historical earthquake in that province. The previous historical maximum earthquake is MMI VII. This could result in an increase in the size of the controlling earthquake and, therefore, the assumed earthquake ground motion and Safe Shutdown Earthquake for nuclear power plant sites in this region which includes much of New England and southern New York.

The historical 1755 MMI VIII Cape Ann earthquake, currently used in the design of Seabrook, is related to a different tectonic province within the White Mountain region of New England.

William J. Dircks
Executive Director for Operations

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

MAR 18 1982

Docket No.: 50-395

MEMORANDUM FOR: Atomic Safety and Licensing Board for Virgil C. Summer Nuclear Station, Unit No. 1

FROM: Robert L. Tedesco, Assistant Director for Licensing, DL

SUBJECT: BOARD NOTIFICATION - POSSIBLE CHANGE OF POSITION BY U. S. GEOLOGICAL SURVEY ON THE LOCALIZATION OF THE 1886 CHARLESTON, S. C. EARTHQUAKE (BN NO. 82-22)

The Extreme External Phenomena Subcommittee of the Advisory Committee on Reactor Safeguards (ACRS) sponsored a two day meeting held on January 28-29, 1982 to hear presentations by prominent earth scientists throughout the U. S. who are engaged in seismic and geologic research. During the seminar much time was spent discussing the geology and seismicity of the Charleston, South Carolina region. In past licensing decisions, the NRC staff has assumed, based primarily on recommendations from the U. S. Geological Survey (USGS), that the relatively high seismicity in the Charleston area, including the 1886 Intensity X Charleston Earthquake would not recur anywhere but in the Charleston area.

Geologic and seismic research, funded by the NRC and carried out by the USGS, has been ongoing in the Charleston area since 1973. In reviewing the Virgil C. Summer OL-SAR, the NRC staff and the USGS considered all of the information available at that time and reaffirmed our original CP-SER conclusion.

No significant new information was presented at the January 28-29 ACRS Subcommittee meeting that was not considered in our evaluation of the Virgil C. Summer Nuclear Station, but the USGS stated that it was reviewing its position on the Charleston earthquake. The USGS review could result in one of the following three positions or some other alternative: (1) A Charleston-type event could only occur in the Charleston area - a reconfirmation of their past position; (2) A Charleston-type event is more likely to occur at Charleston than elsewhere, but is not unique to the Charleston area; (3) A Charleston-type event could occur throughout the eastern seaboard as there is nothing unique to the Charleston area.

The NRC staff continues to support its position stated in the Virgil C. Summer OL-SER pending any new position statement by the USGS, which we expect to receive in the future.

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MAR 1 3 1982

A more detailed discussion of the NRC staff position on this matter is presented in Commission Paper (SECY-82-53), a copy of which is attached. We will notify you immediately upon receipt of the USGS position.

Robert L. Tedesco, Assistant Director
for Licensing
Division of Licensing

Enclosure:
As stated

Mr. T. C. Nichols, Jr.
Vice President & Group Executive
Nuclear Operations
South Carolina Electric & Gas Company
Post Office Box 764
Columbia, South Carolina 29218

cc: Mr. Henry Cyrus
Senior Vice President
South Carolina Public Service Authority
223 North Live Oak Drive
Moncks Corner, South Carolina 29461

J. B. Knotts, Jr., Esq.
Debevoise & Liberman
1200 17th Street, N. W.
Washington, D. C. 20036

Mr. Mark B. Whitaker, Jr.
Group Manager - Nuclear Engineering & Licensing
South Carolina Electric & Gas Company
Post Office 764
Columbia, South Carolina 29218

Mr. Brett Allen Bursey
Route 1, Box 93C
Little Mountain, South Carolina 29076

Resident Inspector/Summer NPS
c/o U. S. NRC
Route 1, Box 64
Jenkinsville, South Carolina 29065

Mr. James P. O'Reilly
U. S. NRC, Region II
101 Marietta Street
Suite 3100
Atlanta, Georgia 30303

DISTRIBUTION OF BOARD NOTIFICATION

(Re possible change of position of 1886
South Charleston earthquake)

Summer (ASLB)

Atomic Safety and Licensing
Board Panel
Atomic Safety and Licensing
Appeal Board Panel
Docketing and Service Section
Brett Allen Bursey
George Fischer, Esq.
Herbert Grossman, Esq.
Dr. Frank F. Hooper
Joseph B. Knotts, Jr., Esq.
Mr. Gustave A. Linenberger
Randolph R. Mahan
Richard P. Wilson, Esq.

ACRS Members

Dr. Robert C. Axtmann
Mr. Myer Bender
Dr. Max W. Carbon
Mr. Jesse C. Ebersole
Mr. Harold Etherington
Dr. William Kerr
Dr. Harold W. Lewis
Dr. J. Carson Mark
Mr. William M. Mathis
Dr. Dade W. Moeller
Dr. David Okrent
Dr. Milton S. Plesset
Mr. Jeremiah J. Ray
Dr. Paul G. Shewmon
Dr. Chester P. Siess
Mr. David A. Ward

February 5, 1982

SECY-82-53

POLICY ISSUE
(Information)

FOR: The Commissioners

FROM: Executive Director for Operations

SUBJECT: POSSIBLE RELOCATION OF DESIGN CONTROLLING EARTHQUAKES IN THE EASTERN U.S.

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USGS that they had formed a working group to reassess the validity of their position on the Charleston earthquake. They indicated that their tentative position concluded that the reoccurrence of a Charleston-type earthquake should not be considered unique to the Charleston area. It was further indicated their recommendation would be forwarded to the USGS Director in approximately one month and that a policy decision on the treatment of the Charleston earthquake would be made at the Director's level.

Any major modification of the former USGS position could have significant impact on many Eastern US nuclear plant sites because Appendix A to 10 CFR Part 100 could require an earthquake of this type, with its resulting high ground motion, to be assumed to occur at any location.

A meeting between the EDO and the Director, USGS, on licensing issues is planned for the near future. Further information may be available at that time.

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William J. Dircks
Executive Director for Operations

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BOARD NOTIFICATION DISTRIBUTION (82-22) MAR 18 1982

Docket File
LB#1 Reading
Board Notification File
D. Eisenhut
NRC PDR
Local PDR
DL Branch Chiefs
W. Kane
B. J. Youngblood
M. Rushbrook
R. H. Vollmer
M. Jambor
R. Mattson
S. Hanauer
B. Snyder
R. Hartfield, MPA
OELD
OIE (1)
TERA
NSIC
TIC
ACRS (16)
H. R. Denton/ E. Case
PPAS
W. J. Dircks
V. Stello
S. Goldberg, ELD
J. O'Reilly, Region II
J. Sniezek, IE Hqrs.
R. L. Tedesco
H. Thompson
D. Ziemann

4/26/82

From: JIM BAILEY

To: JANE GRANT

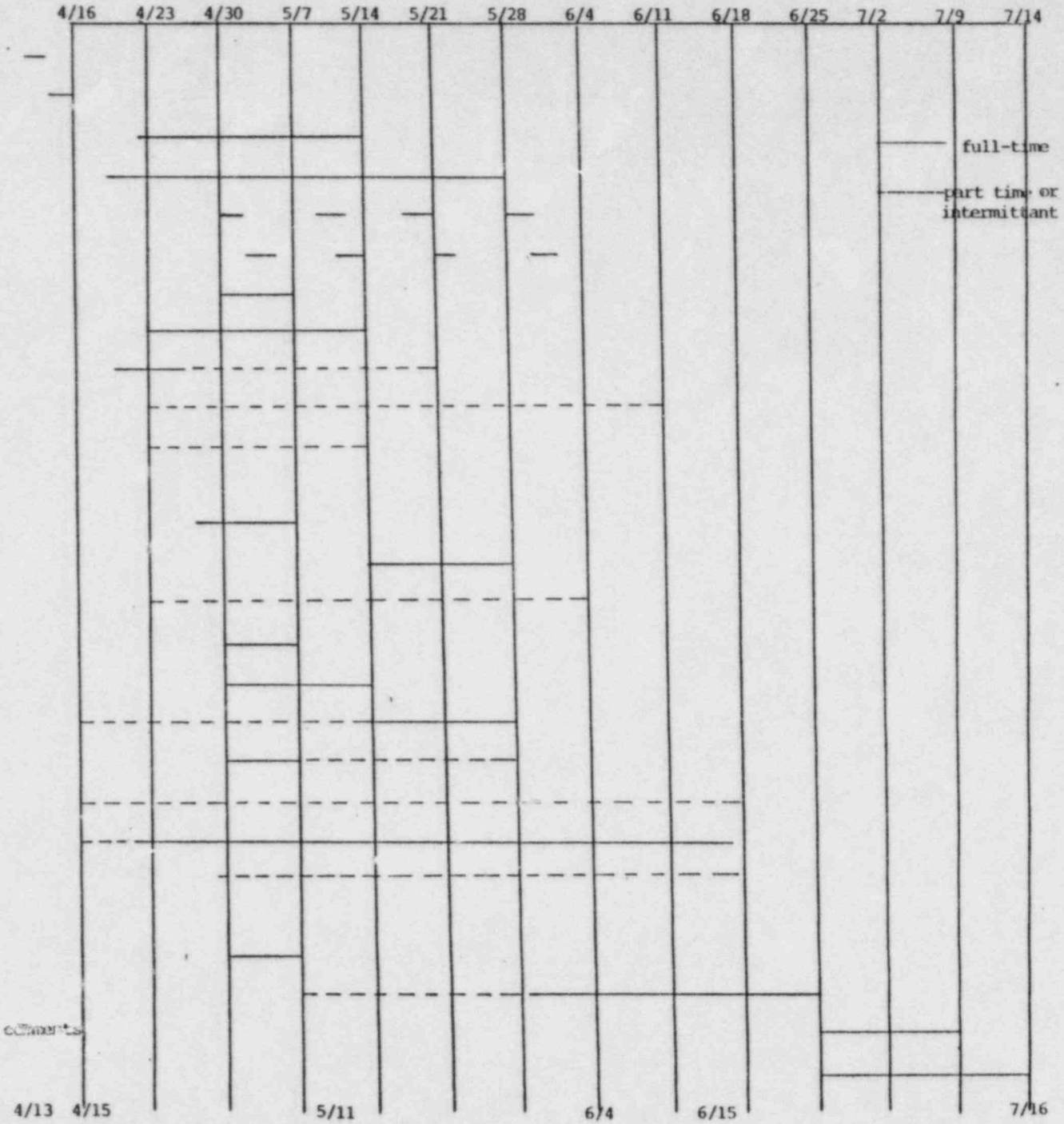
- ☐ Comment
- ☐ Correction(s)
- ☐ Investigate
- ☐ Review
- ☐ See Me
- ☐ Per Our Conversation
- ☐ Action Required
- ☒ As Requested
- ☐ For Your Approval
- ☐ For Your Information

☐ Circulate ☐ Return ☐ File ☐ Discard

AS I DISCUSSED WITH YOU EARLIER THIS IS AN ITERATIVE PROCESS, BUT THIS IS THE FIRST CUT AT OUR PROGRAM.

Form No. 9-622A

MILLETT FAULT STUDY SCHEDULE



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Georgia Power Company
Post Office Box 4545
Atlanta, Georgia 30302

D. E. Dutton
Vice President

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Georgia Power
the southern electric system

June 1, 1982

Jeffery Armbruster
District Chief
U.S. Geological Survey
6481 Peachtree Industrial Boulevard
Suite B
Doraville, GA 30360

Dear Mr. Armbruster:

Our drilling program to provide geologic information on the "Suggested Millet Fault" is now underway near the Savannah River with four drills presently core drilling on the Georgia side. As mentioned in earlier conversations with you, we are pleased to cooperate with you, to provide more information on the subsurface geology of the area. Members of your group are invited to visit our drilling operations in the field and log the core samples collected. Current plans are to complete these holes as permanent observation wells to allow future measurements of the potentiometric ground water surface.

In addition, to core drilling, a suite of geophysical logs have been run in each of the holes to assist in structural interpretation by correlation of lithologic units. A copy of each of the field geophysical logs is attached for your use. As these are preliminary, please treat as proprietary until official transmittal to the NRC or unless specific written permission is granted for release. Copies of the final geophysical logs will be sent to you as soon as they become available.

Sincerely yours,

Doug Dutton

Doug Dutton
Vice President
Generating Plant Projects

jwa
Attachment
cc: R. E. Jackson (w/attachment)
W. I. Marine (w/attachment)
M. Hawkins (w/attachment)
Dr. W. Hayes (w/o attachment)
R. Morriss (w/o attachment)
D. O. Foster (w/o attachment)
J. A. Bailey (w/o attachment)
O. Batum (w/o attachment)
R. A. Thomas (w/o attachment)
C. R. McClure (w/o attachment)
J. M. Grant (w/o attachment)

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Southern Company Services, Inc.
Post Office Box 2625
Birmingham, Alabama 35202
Telephone 205 870-6011

Vogtle Project

June 9, 1982

Jeffery Armbruster
District Chief
U.S. Geological Survey
6481 Peachtree Industrial Boulevard
Suite B
Doraville, GA 30360

Dear Mr. Armbruster:

As you are aware our drilling program to provide geologic information on the "suggested Millett Fault" is now underway near the Savannah River. Attached is a copy of the final field geophysical logs for drill holes VG-1, VG-3, VG-4 and VG-66. Please treat as proprietary until official transmittal to the NRC or unless specific written permission is granted for release. Copies of the final geophysical logs for the other holes will be sent to you as soon as they become available.

Yours truly,

J. A. Bailey
Project Licensing Manager

JAB/ssb
Enclosure
xc: R. A. Jackson (w/attachment)
I.W. Marine (w/attachment)
M. Hawkins (w/attachment)
W.V. Conn (w/attachment)
R. Morriss (w/o attachment)
D.O. Foster (w/o attachment)
D.E. Dutton (w/o attachment)
O. Batum (w/o attachment)
R.A. Thomas (w/o attachment)
C.R. McClure (w/o attachment)
J.M. Grant (w/o attachment)

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Southern Company Services, Inc.
Post Office Box 2625
Birmingham, Alabama 35202
Telephone 205 870-6011

Vogtle Project

June 24, 1982

Mr. Jeffery Armbruster
District Chief
U.S. Geological Survey
6481 Peachtree Industrial Boulevard
Suite B
Doraville, GA 30360

Dear Mr. Armbruster:

Enclosed is a copy of the final field geophysical logs for Drill Holes VG-4, VG-5, VG-6, and VG-7. Two sets of the composite log for VG-4 are included. The original log was not in the same format as the previous Birdwell Logs, so Law was requested to transpose the traces onto a log with the same format. Both logs are included for verification of the original. Please treat as proprietary until official transmittal to the NRC or unless specific written permission is granted for release. Copies of the final geophysical logs for the other holes will be sent to you as soon as they become available.

Sincerely yours,

J. A. Bailey

J. A. Bailey
Projects Licensing Manager

JAB/jwa
Enclosure
xc: R. A. Jackson (w/attachment)
I. W. Marine (w/attachment)
M. Hawkins (w/attachment)
W. V. Conn (w/attachment)
R. Morris (w/o attachment)
D. O. Foster (w/o attachment)
D. E. Dutton (w/o attachment)
O. Batum (w/o attachment)
R. A. Thomas (w/o attachment)
C. R. McClure (w/o attachment)
J. M. Grant (w/o attachment)