



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

*12 Beckham*

OCT 26 1983

MEMORANDUM FOR: Zoltan R. Rosztoczy, Chief  
Research and Standards Coordination Branch  
Division of Safety Technology, NRR

FROM: James A. Norberg, Chief  
Human Factors and Safeguards Branch  
Division of Facility Operations, RES

SUBJECT: OBTAINING INFORMATION FROM NPP LICENSEES TO SUPPORT  
HUMAN FACTORS RESEARCH

The purpose of this memorandum is to obtain your support and coordination in NRR for RES/DFO contractor personnel to solicit information from nine selected BWR and PWR NPP licenses. This effort has been fully coordinated with DL (M. Williams) and DHFS (D. Jones and D. Beckham) and has been previously described and presented for comment to NRR via a memorandum for T. P. Speis from K. R. Goller, dated September 6, 1983. As a result of discussions which ensued within NRR and between your office (Dr. P. Williams) and my staff (J. Jenkins), the original request has been modified to reflect NRR suggestions and is presented herein.

The information to be solicited is on training and procedures related to the earthquake events approximating the Safe Shutdown Earthquake. This information is needed to complete a human factors research project on the effects of seismic events on the performance of operating personnel. The objective of this research project is to evaluate the effectiveness of training and procedures in preparing operating personnel to respond to earthquake events and how this preparation might be improved.

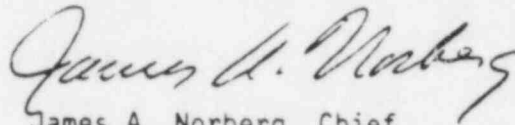
It is proposed that the information be obtained by our contractor's, EG&G Idaho, operator licensing examiners during their periodic examination trips to plant sites. The examiners would obtain from the training staff and operators a copy of the training curriculum and procedures relating to the safe shutdown earthquake. EG&G human factors analysts would evaluate these procedures and curricula. Some discussions with training and operating personnel may be necessary to clarify the data. The contractor licensing examiners will not make any special trips as part of this project, and they will assure each licensee that participation in this research has no relation to the examination process which is the principal purpose of the visit. A letter (Enclosure 1) to the selected licensees is proposed to document these purposes and would be given by the contract examiner to each licensee at the occasion of the request for training and procedures information. Enclosure 2 is a list of nine proposed NPP licensees and a proposed schedule of each visit.

I believe that the utilization of the operator examiners to obtain this information will be less intrusive to the licensee than other methods and is also cost effective in that a special visit is not required, thereby minimizing costs and burden to the licensees and the NRC.

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If you have questions, please call me or J. Jenkins, the research project manager, Ext. 37657. Your cooperation on this is appreciated.



James A. Norberg, Chief  
Human Factors and Safeguards Branch  
Division of Facility Operations, RES

Enclosure:

1. Proposed Letter
2. List of Proposed Visits

cc: M. W. Williams, NRR/DL  
D. Jones, NRR/DHFS  
P. Williams, NRR/DST  
~~D. Beckham~~, NRR/DHFS

MEMORANDUM FOR: NRC Operating Licensee

FROM: Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

SUBJECT: REQUEST FOR INFORMATION

This letter is to confirm the purpose and constraints of a request by the EG&G operator examiner for copies of selected training information and operating procedures.

EG&G, under contract to the NRC Office of Nuclear Regulatory Research is to complete a human factors research project on the potential effects of seismic events on operating personnel performance. A part of that project is to obtain and analyze current training curricula and programs and operating procedures to evaluate the effectiveness of the training and procedures in preparing operating personnel to respond to a seismic event.

The EG&G licensing examiners have been directed to present this letter and to request copies of the training curriculum and procedures to be used in a seismic event. EG&G human factors analysts will assess this information and may contact your training staff to clarify issues, if necessary. This task should not affect the examiner's purpose of giving licensing examinations.

I request your cooperation in providing this information; however, your cooperation will not be a factor in the examination process.

Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

LIST OF 9 NPP's TO BE VISITED

<u>Month</u>	<u>Plant Name</u>	<u>NSSS Type</u>
<u>October</u>	Calloway	PWR
<u>October</u>	Byron	PWR
<u>October</u>	Dwayne Arnold	BWR
November	Fermi	BWR
November	North Anna	PWR
November	Kenanee	PWR
November	SONGS-1	PWR
December	Grand Gulf	BWR
December	Sequoyah	BWR

(Alternate if one of the above is unavailable: December Quad Cities, BWR).

MEMORANDUM FOR: Leon L. Beratan, Chief  
Earth Sciences Branch, RES

FROM: Thomas J. Schmitt  
Earth Sciences Branch, RES

SUBJECT: RESPONSE TO GEOSCIENCES BRANCH PLAN TO ADDRESS THE  
USGS CLARIFICATION OF POSITION ON SEISMICITY OF  
EASTERN SEABOARD

The Geosciences Branch plans to address the USGS clarification of eastern seaboard earthquakes involves three efforts: (1) a probabilistic analysis utilizing existing RES and NRR contracts; (2) a deterministic approach, utilizing existing RES programs, and (3) suggested probabilistic and perhaps deterministic analysis conducted by utilities. This memorandum deals with relationship of the specific NRR request to the existing RES deterministic programs and suggested changes to meet the specific NRR request.

The Geosciences action plan specifies five regions for deterministic investigations. These areas are: (1) Charleston; (2) the Ramapo fault zone; (3) the Central Virginia seismic zone; (4) Giles County, Virginia, and (5) the New England area. The type of studies requested and the precise time frame of the products is variable, however, status reports on each of those regions are requested within a year to 18 months (Jan.-June 1984).

The majority of the programs to meet the NRR goals are in place or are about to be put in place. The major difficulty in meeting the NRR request will be in obtaining status reports within the desired time frame. The difficulties are not necessarily resource related. To obtain satisfactory status reports for some of the regions, the cooperation of other agencies of the Federal Government is needed. We can seek this cooperation and are likely to get it, however, we have no assurances that we will obtain it.

The attachment shows relationship of the NRR requests to existing or planned RES activities, and the changes that must be made to meet the specific goals. The

plans for making those changes and the anticipated difficulties in applying the plans are also included.

Thomas J. Schmitt  
Earth Sciences Branch

Attachment

Attachment #1

The plan proposed by the Geosciences Branch for resolution of the USGS position follows very closely the Seismotectonic Plan. The major differences involve the timing of "status reports" on the major issues which NRR wants within a year to 18 months. NRR needs these "status reports" for input into their decision process.

Because of the short term nature of the status reports, they must be primarily technical in nature. Furthermore, they must involve very little interpretation of the data. Data is often obtainable on short turnarounds but interpretations are not, especially when they involve other Federal agencies. It will be the responsibility of NRR:RES to use the data in policy formation.

This is a very delicate point, particularly with the USGS. They will want (and deserve) the recognition for the scientific work. However, it is our responsibility for the policy interpretation.

*To make the deadlines we must take the*

Below are the elements of the deterministic aspect of the proposed NRR plan. The relationship of the elements are described and proposed changes to RES ongoing projects necessary to meet the NRR needs are given ((\* ) indicates an area of significant deviation from present program).

1) A Charleston Region

- (a) May 1983 - Hold a workshop on the 1886 Charleston Earthquake and It's Implication Today.

This workshop will be held on schedule.

- \* (b) September 1983 - Have a program in place to test the most likely tectonic hypothesis.

To meet this goal and the next one will require some change in direction. This goal involves coordination of activity with the USGS and other agencies. To meet this goal very specific technical goals must be established after the May meeting.

- \*(c) June 1984 - "Status Report" on hypothesis testing.

As mentioned above, this involves coordination with the USGS. This goal can be met only if there are very specific technical goals established. Broad policy questions can not be resolved in that time frame.

- \*(d) Jan. 1985 - "Status Report" on hypothesis testing.

This is subject to the same problems as above. It is meetable but as it involves other agencies the exact technical goals must be established early in the process.

## 2) Ramapo Fault Zone

- \*(a) April 1983 - Evaluation of Ramapo utilizing: 1) multichannel seismic reflection; 2) in situ stress measurements, <sup>and</sup> 3) geodetic technique.

This can be met. However, the USGS has expressed interest in conducting the multichannel seismic studies. Consequently there are the policy questions mentioned above.

The in situ stress measurements will be conducted as part of a competitive contract as will the geodetic aspect.

- \*(b) January 1984 - "Status Report" on Ramapo.

This can be met. However, it is a very tight deadline. Close cooperation with the USGS will be necessary. The "status report" must be primarily technical.

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- \*(c) January 1985 - "Status Report"

Same as above.

### 3) Central Virginia Seismic Zone

- (a) April 1983 - Present plan for evaluation of the Central Virginia Seismic Zone utilizing: 1) geophysical techniques; 2) in situ stress measurements, and 3) geodetic measurements.

The geophysical work is underway in an existing contract, the stress measurement and geodetic measurements will be conducted through contracts to be completed in the Summer of 1983.

- (b) January 1984 - "Status Report"

This should be meetable. This milestone will be placed in the completed contracts.

- (c) January 1985 - "Status Report"

This should be meetable.

### 4) Giles County, Virginia

- (a) April 1983 - Initiate planning of RES. This is underway presently.

- (b) August 1983 - Initiate seismic reflection profiling of Giles County structure.

This will be undertaken by RES entering an industry consortium for seismic studies. This should be completed by March 1983.

- (c) April 1984 - "Status Report" and Plane

\*The status report will be easily obtainable by April 1984. There is a possible problem in that if we want investigations different from those of the consortium then the cost will be high. This would require a significant redirection of resources.

\* (d) April 1985 - "Status Report"

As above, if work desired significantly from that of the consortium, then this would require a significant redirection of funds.

5) New England

(a) April 1983 - Plans for stress measurement at Moodus.

This is covered in an existing contract.

(b) August 1983 - Conduct stress measurement at Moodus.

This is covered in existing contracts.

(c) April 1984 - "Status Report" stress measurement.

Attainable under existing efforts.

(d) January 1985 - "Status Report" stress measurement.

Attainable under existing efforts