

MAR 11 1985

Mr. Richard A. DuVal, Manager
San Francisco Operations Office
U. S. Department of Energy
1333 Broadway, Wells Fargo Building
Oakland, California 94612

Dear Mr. DuVal:

Subject: LLNL Technical Assistance to the Division of Safety Technology,
NRR, NRC, "Review of Seabrook Nuclear Power Plant Probabilistic
Risk Analysis" (FIN A-0801)

The enclosed NRC Form 173, Standard Order for DOE Work, is hereby submitted
in accordance with Section III.P.2 of the DOE/NRC Memorandum of Understanding
dated February 24, 1978.

Pursuant to Manual Chapter 1102, Part IV(11), the enclosed NRC Form 173 orders
all work to be stopped on the subject project immediately. The reason for the
Stop Work Order is the lack of utility participation and support. This order
becomes effective upon the San Francisco Operations Office acceptance of an
appropriately executed NRC Form 173.

In addition, we have reviewed your Monthly Management Letter #8, dated
February 4, 1985, and we are providing funds of \$40,000.

If you have any questions concerning this Stop Work Order, please contact
the NRC Project Manager, Sarah Davis, on FTS 492-7546 or Jayne Halvorsen on
FTS 492-7932.

Sincerely,

FOIA-87-006

B/45

Themis P. Speis, Director
Division of Safety Technology
Office of Nuclear Reactor Regulation

Enclosure: NRC Form 173

cc: R. Barber, HQ/DOE
J. M. Johnson, LLNL
A. Garcia, LLNL, L-95

DIST: NRR Contract Files (DiGaloma)
SDavis RFrahm ATHadani RRAB Rdr
Davis Rdr AD/T rdr MFarr DST Chron
TSpeis FRowsome ZRosztoczy JHalvorsen
VZeoli, ORM
DDandois, ORM

~~AD/T/DST~~
~~MEBT~~
2/21/85

* See Previous Concurrence

OFFICE	RRAB/DST*	RRAB/DST *	RRAB/DST*	AD/T *	PA/DST	NRR	D/DST
SURNAME	SDavis/vr/ct	RFrahm	ATHadani	FRowsome	JHalvorsen	TDiGaloma	TPSpeis
DATE	2/27/85	2/21/85	2/21/85	2/21/85	2/25/85	2/0/85	3/11/85

Distribution
 NR Contract files (TDiGaloma)
 RRAB Rdg file
 SDavis
 DAVIS CHRON
 RFrahm
 AThadani
 MFarr
 FRowsome
 AD/T Rdg
 JHalvorsen
 TSpeis
 DST CHRON
 VZeoli, ORM
 DDandois, ORM
 ZRosztoczy

Mr. Richard A. DuVal, Manager
 San Francisco Operations Office
 U. S. Department of Energy
 1333 Broadway, Wells Fargo Building
 Oakland, California 94612

Dear Mr. DuVal:

Subject: LLNL Technical Assistance to the Division of Safety Technology,
 NRR, NRC, "Review of Seabrook Nuclear Power Plant Probabilistic
 Risk Analysis" (FIN A-0801)

The enclosed NRC Form 173, Standard Order for DOE Work, is hereby submitted
 in accordance with Section III.B.2 of the DOE/NRC Memorandum of
 Understanding dated February 24, 1978.

Funding authorization in the amount of \$75,000 to begin work on this subject
 project was transmitted on April 3, 1984; \$156,000 on August 28, 1984; and
 \$29,000 was transmitted on September 12, 1984. By letter dated January 29,
 1985, the period of performance was extended to April 15, 1985. In response
 to Monthly Management Letter #8, dated February 4, 1985, we are transmitting
 the requested amount of \$40,000. The purpose of this letter is to issue a
 stop work order. No further funds should be spent on this contract (FIN
 A-0801).

If you have any questions concerning acceptance of this order, please
 contact Ms. Halvorsen on FTS 492-7932.

Sincerely,

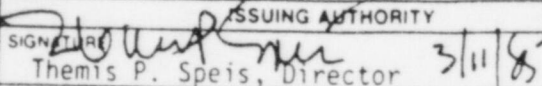
Themis P. Speis, Director
 Division of Safety Technology
 Office of Nuclear Reactor Regulation

Enclosure: NRC Form 173

cc: R. Barber, HQ/DOE
 J. M. Johnson, LLNL
 A. Garcia, LLNL, L-95

AD/T:DST
 MFarr
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OFFICE	RRAB:DST SDavis <i>SD</i>	RRAB:DST RFrahm <i>RF</i>	RRAB:DST <i>SI</i> AThadani <i>AT</i>	AD/T:DST FRowsome <i>FR</i>	PA:DST JHalvorsen	NRR TDiGaloma	D:DST TSpeis
SURNAME	SDavis	RFrahm	AThadani	FRowsome	JHalvorsen	TDiGaloma	TSpeis
DATE	2/20/85	2/21/85	2/24/85	2/21/85	2/ /85	2/ /85	2/ /85

NRC FORM 173 (1-84)		U.S. NUCLEAR REGULATORY COMMISSION		ORDER NUMBER 20-85-272	
STANDARD ORDER FOR DOE WORK				DATE MAR 11 1985	
ISSUED TO: (DOE Office) San Francisco Operations Office		ISSUED BY: (NRC Office) Office of Nuclear Reactor Regulation, DST		ACCOUNTING CITATION APPROPRIATION SYMBOL 31X0200.205	
PERFORMING ORGANIZATION AND LOCATION Lawrence Livermore National Laboratory Livermore, California				B&R NUMBER 20-19-40-41-5	
FIN TITLE Review of Seabrook Nuclear Power Plant Probabilistic Risk Analysis				FIN NUMBER A-0801-5	
				WORK PERIOD - THIS ORDER	
				FIXED <input checked="" type="checkbox"/>	ESTIMATED <input type="checkbox"/>
				FROM 05/15/84	TO 09/15/85
OBLIGATION AVAILABILITY PROVIDED BY:					
A. THIS ORDER				\$ 40,000	
B. TOTAL OF ORDERS PLACED PRIOR TO THIS DATE WITH THE PERFORMING ORGANIZATION UNDER THE SAME "APPROPRIATION SYMBOL" AND THE FIRST FOUR DIGITS OF THE "B&R NUMBER" CITED ABOVE				\$ 546,000	
C. TOTAL ORDERS TO DATE				(TOTAL A & B) \$ 586,000	
D. AMOUNT INCLUDED IN "C" APPLICABLE TO THE "FIN NUMBER" CITED IN THIS ORDER				\$ 40,000	
FINANCIAL FLEXIBILITY <input checked="" type="checkbox"/> FUNDS WILL NOT BE REPROGRAMMED BETWEEN FINs. LINE D CONSTITUTES A LIMITATION ON OBLIGATIONS AUTHORIZED. <input type="checkbox"/> FUNDS MAY BE REPROGRAMMED NOT TO EXCEED $\pm 10\%$ OF FIN LEVEL UP TO \$50K. LINE C CONSTITUTES A LIMITATION ON OBLIGATIONS AUTHORIZED.					
STANDARD TERMS AND CONDITIONS (see NRC Manual Chapter 1102, Appendix Part 4) ARE PART OF THIS ORDER UNLESS OTHERWISE NOTED					
ATTACHMENTS THE FOLLOWING ATTACHMENTS ARE HEREBY MADE A PART OF THIS ORDER <input type="checkbox"/> STATEMENT OF WORK <input type="checkbox"/> ADDITIONAL TERMS AND CONDITIONS <input checked="" type="checkbox"/> OTHER (STOP WORK)			SECURITY <input type="checkbox"/> WORK ON THIS ORDER INVOLVES CLASSIFIED INFORMATION. NRC FORM 187 IS ATTACHED. <input type="checkbox"/> WORK ON THIS ORDER INVOLVES UNCLASSIFIED SAFEGUARDS PROPRIETARY OR OTHER SENSITIVE INFORMATION. <input checked="" type="checkbox"/> WORK ON THIS ORDER IS UNCLASSIFIED AND NOT SENSITIVE.		
<input type="checkbox"/> FEE RECOVERABLE WORK <input type="checkbox"/> NON-FEE RECOVERABLE WORK					
REMARKS (Reference the proposal by number and date, and indicate if the attached statement of work modifies the DOE proposal): This order provides \$40,000 in response to Monthly Management Letter #8 dated February 4, 1985, and provides that all work on this project be stopped immediately. No further costs are to be incurred under this FIN.					
After acceptance, please send to the NRC Office of Resource Management, ATTN: D. Dandois, and provide a copy to the Office of Nuclear Reactor Regulation, ATTN: K. McGrath.					
ISSUING AUTHORITY			ACCEPTING ORGANIZATION		
SIGNATURE  Themis P. Speis, Director 3/11/85			SIGNATURE		
TITLE Division of Safety Technology			TITLE		
			DATE		

circulated

MEMORANDUM FOR: Themis P. Speis, Director
 Division of Safety Technology

FROM: Ashok C. Thadani, Chief
 Reliability and Risk Assessment Branch

SUBJECT: SEABROOK PSA REVIEW - OPTIONS AND RECOMMENDATIONS FOR THE
 CONTINUATION OF THE REVIEW

The purpose of this memorandum is to apprise you of the status of the review effort and the options and recommendation for the continuation of this review which will affect the Phase I report to be transmitted to Division of Licensing by January 31, 1985 (per the FY84 Operating Plan).

We received a draft review report from Lawrence Livermore Laboratories on December 20, 1984 (Enclosure 3). A summary and evaluation of the salient features of the report is provided as Enclosure 2, and Enclosure 1 is a proposed memo of transmittal to DL to accompany the summary and draft review report, which satisfies our commitment to provide a Phase I report of the Seabrook PRA review by January 31, 1985.

The review has been impeded by circumstances and problems in several areas. This PSA was submitted to the NRC voluntarily by Public Service of New Hampshire during a period of severe financial problems surrounding the completion of the Seabrook plants and the stability of the applicant utility. Since the PSA has not been tied to a specific licensing action, the applicant made the decision that they were not able to allot resources for the support of the review of this document. They did provide staff to conduct a plant visit in late August, but did not provide any further support in terms of supplying all documentation requested, answers to questions from our contractor and the staff, and, having severed their contract with their consultant who performed the PSA, could not provide an avenue for answers or documentation from the authors of the PSA. We acknowledge these decisions were not made in a spirit of non-cooperation but rather financial circumstances which outweighed their desire to provide support, but nonetheless seriously affected the ability to provide a thorough and conclusive review.

From another source, the PSA itself, problems arose regarding the contractor's ability to perform a review which provided verification of the methods, assumptions, and results of the PSA. More importantly, they were not able to assess the impact from areas of disagreement on the perception of plant safety, overall risk, and core melt frequency as reported the PSA.

*FOIA-87-006
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Contact: Sarah Davis, RRAB

49-27546

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However, a qualitative judgment, made by LLNL, is that the overall core melt frequency would not be significantly changed by the differences they cite in areas of disagreement.

All of the above leads us to the situation at hand. The draft review report from LLNL notes disagreements and what they consider to be errors in the PSA, but has not provided a definitive cohesive presentation of the engineering insights obtained from the PSA nor the effects of their conclusions on the results of the PSA. There is information presented that appears to potentially provide useful insight into the understanding of the strengths and weaknesses of the design and proposed operation of the Seabrook plant, but it lacks the overall focus of increasing our understanding of the important contributors to plant safety.

There is a question at this point as to if and how Phase II of the review should proceed. The bounding options are to (1) terminate the review with the transmittal of the Phase I report or to (2) extend the funding and schedule for this review to allow the contractor to pursue an alternative method of identifying and quantifying accident sequences resulting from their own constructed event tree/fault tree analyses. An option in-between, though not identified by the contractor, would require the expenditure of the remaining funds allotted for this review with a focus on improving the draft report or pursuing individual issues of interest to us as there has not been a discrepancy or error identified in the review report which is estimated, at this point, to significantly change the results of the Seabrook PSA.

Listed below are primary points in consideration of further action:

- 1) the circumstances under which the review has been performed have not changed,
- 2) the feasibility of the review report being substantially improved in a cost effective manner is questionable, and
- 3) the purpose/focus of the review beyond this point (e.g., specific licensing actions, hearing contentions, etc.) is not clearly defined. (Should that become the case, perhaps a more specific and supported review would be appropriate at that time.)

In consideration of the pros and cons associated with the options delineated, we recommend that the review be terminated at this point. There does not appear to be enough conclusive reasons to expend any further funding and a Phase I report will be delivered to Division of Licensing, per the OP commitment. Should circumstances change, we can initiate further work in the areas that are identified as meriting supported review and analysis.

Reactor Systems Branch is responsible for a review of containment failure modes and consequence analyses. Their input has not been received. They

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expect to receive a review report from their contractor (BNL) January 24, 1985. Since their input has not been received according to the agreed upon schedule, we can only state in the Phase I report that these areas will be covered in a subsequent document.

Ashok C. Thadani, Chief
Reliability and Risk Assessment Branch

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