

December 6, 1983

Mr. Gregory J. Ogeka, Chief  
Administrative Branch  
Brookhaven Area Office  
Building 464  
Upton, NY 11973

Dear Mr. Ogeka:

Subject: BNL Technical Assistance to the Division of Safety Technology,  
NRR, NRC, "Review of Probabilistic Risk Assessment for the  
Shoreham Nuclear Power Plant" (FIN A-3740)

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 \$50,000 to immediately begin work on the subject project was transmitted to you on September 6, 1983. The purpose of this letter is to accept with minor modification your proposal, dated October 4, 1983, and to transmit FY84 incremental funds in the amount of \$120,000 for continuation of the project.

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

Sincerely,

/s/

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

Enclosure:  
NRC Form 173  
Modification to Proposal  
cc: R. Barber, HQ/DOE  
W. Kato, BNL  
H. C. Grahn, BNL  
H. J. Rauch, DOE/CHOO  
R. Romano, BNL

8507130447 850426  
PDR FOIA  
BELAIR85-199 PDR

AD/T:DST  
MF:JVS  
11/2/83

Distribution  
RRAB RDG  
DST Chron  
AD/T RDG  
A. Thadani  
J. Veillette  
T. Speis  
M. Farr  
F. Rowsome  
EChow Chron

Z. Rosztoczy  
NRR Contract File(BGrenier)

A. Buslik  
V. Zeoli, CON  
D. Dandios, CON

OFFICE	RRAB:DST	RRAB:DST	RRAB:DST	AD/T:DST	PA:DST	NRR	D:DST
SURNAME	EChow	ABuslik	AThadani	FRowsome	JVeillette	BGrenier	TSpeis
DATE	11/2/83	11/2/83	11/2/83	11/2/83	11/2/83	11/2/83	11/2/83

## STANDARD ORDER FOR DOE WORK

20-84-124

DATE

December 6, 1983

ISSUED TO: (DOE Office)

Brookhaven Area Office

ISSUED BY: (NRC Office)

Office of Nuclear Reactor  
Regulation, DST

ACCOUNTING CITATION

APPROPRIATION SYMBOL

31X0200.204

B&amp;R NUMBER

20-19-40-41-5

FIN NUMBER

A3740-5

PERFORMING ORGANIZATION AND LOCATION

Brookhaven National Laboratory  
Upton, New York

WORK PERIOD - THIS ORDER

FIXED ☒ESTIMATED ☐

FIN TITLE

Review of Probabilistic Risk Assessment for the Shoreham  
Nuclear Power Plant

FROM:

09/13/83

TO:

06/30/84

## OBLIGATION AVAILABILITY PROVIDED BY:

A. THIS ORDER

\$ 120,000

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

\$ 2,706,000

C. TOTAL ORDERS TO DATE

(TOTAL A &amp; B)

\$ 2,826,000

D. AMOUNT INCLUDED IN "C" APPLICABLE TO THE "FIN NUMBER" CITED IN THIS ORDER.

\$ 120,000

## FINANCIAL FLEXIBILITY:

☒ FUNDS WILL NOT BE REPROGRAMMED BETWEEN FINs. LINE D CONSTITUTES A LIMITATION ON OBLIGATIONS  
AUTHORIZED.☐ 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 PROVIDED DOE ARE CONSIDERED PART OF THIS ORDER  
UNLESS OTHERWISE NOTED.

## ATTACHMENTS:

THE FOLLOWING ATTACHMENTS ARE HEREBY  
MADE A PART OF THIS ORDER:

- ☒
- STATEMENT OF WORK (Modification)
- 
- ☐
- ADDITIONAL TERMS AND CONDITIONS
- 
- ☐
- OTHER

## SECURITY:

- ☒
- WORK ON THIS ORDER IS NOT CLASSIFIED.
- 
- ☐
- WORK ON THIS ORDER INVOLVES CLASSIFIED
- 
- INFORMATION. NRC FORM 187 IS ATTACHED.

REMARKS (Reference the proposal by number and date, and indicate if the attached statement of work modifies the DOE proposal):

This order accepts the BNL proposal dated October 4, 1983 with the incorporation of the revised schedule on the attached modification and provides incremental funds for continuation of work. Additional funds will be provided in FY 1984 for completion of work commensurate with the effort expended.

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: C. Paugh.

ISSUING AUTHORITY

ACCEPTING ORGANIZATION

Signature of Themis P. Speis, Director

SIGNATURE

TITLE

Division of Safety Technology

TITLE

DATE

MODIFICATION TO A-3740

Revise Due Dates to Read As Follows:

Task 1:	Draft report on review	4/30/84
Task 2:	Q-1 to applicant	11/30/83
Task 3:	Final report	Two months after receiving appropriate NRC comments



June 28, 1984

## PROJECT AND BUDGET PROPOSAL FOR NRC WORK

☐ NEW☒ REVISION NO. 2

PROJECT TITLE			FIN NUMBER
Review of Probabilistic Risk Assessment for the Shoreham Nuclear Power Plant			A-3740
NRC OFFICE			NRC B&R NUMBER
Nuclear Reactor Regulation			20-19-40-41-5
DOE CONTRACTOR			CONTRACTOR ACCOUNT NUMBER
Associated Universities, Inc. Brookhaven National Laboratory			04197
SITE			DOE B&R NUMBER
Upton, New York 11973			
COGNIZANT PERSONNEL	ORGANIZATION	FTS PHONE NUMBER	PERIOD OF PERFORMANCE
NRC PROJECT MANAGER			STARTING DATE
E. Chow	REG/RRAB	492-4727	09/13/83
OTHER NRC TECHNICAL STAFF			COMPLETION DATE
A. Thadani	REG/RRAB	492-4705	02/15/85 FIX
DOE PROJECT MANAGER			
David Schweller	Brookhaven Area Office	666-3424	
CONTRACTOR-PROJECT MANAGER			
H. J. Kouts W. Y. Kato	BNL/DNE	666-2815 666-2444	
PRINCIPAL INVESTIGATOR(S)			
I. Papazoglou	BNL/DNE	666-2435	

STAFF YEARS OF EFFORT (Round to nearest tenth of a year)	FY 1983	FY 1984	FY 1985	FY	FY
Direct Scientific/Technical	0.2	2.0	0.1		
Other Direct (Graded)	0.1	0.3	0.1		
TOTAL DIRECT STAFF YEARS	0.3	2.3	0.2		

COST PROPOSAL					
Direct Salaries	9	125	8		
Material and Services (Excluding ADP)	0	4	0		
ADP Support	0	25	1		
Subcontracts	0	0	0		
Travel Expenses	Foreign	0	0		
	Domestic	0	12	1	
Indirect Labor Costs (Departmental Administration)	1	15	1		
Other (Specify) Electric Power Distribution	0	2	0		
General and Administrative ( 40 % of modified direct cost)	4	72	4		
TOTAL OPERATING COST	14	255	15		
CAPITAL EQUIPMENT	0	0	0		
FIN CHARGED:					
TOTAL PROJECT COST	14	255	15		

FY 1984	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH
	26	11	27	17	26	34
MONTHLY FORECAST EXPENSE (dollars in thousands)	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
	16	0	38	20	20	20

NRC FORM 189  
(3-81)

U.S. NUCLEAR REGULATORY COMMISSION

FIN NUMBER

## PROJECT AND BUDGET PROPOSAL FOR NRC WORK

A-3740

DATE







June 28, 1984

## PROJECT TITLE

Review of Probabilistic Risk Assessment for the Shoreham  
Nuclear Power Plant

## DOE PROPOSING ORGANIZATION

Associated Universities, Inc.  
Brookhaven National LaboratoryFORECAST MILESTONE CHART: Scheduled to Start —  — Completed (Shown in Quarter Year)  
PROVIDE ESTIMATED DOLLAR COST FOR EACH TASK FOR EACH FISCAL YEAR

TASK		FY 1983				FY 1984				FY 1985				FY				FY			
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Task 1	SCHEDULE																				
	COST		14K				200K				5K										
Task 2	SCHEDULE																				
	COST						20K														
Task 3	SCHEDULE																				
	COST						35K				10K										
	SCHEDULE																				
	COST																				
	SCHEDULE																				
	COST																				
TOTAL ESTIMATED PROJECT COST			14K				255K				15K										

PROJECT DESCRIPTION: (Provide narrative descriptions of the following topics in the order listed. Attach on plain paper to this NRC Form 189. If an item is not applicable, so state.)

1. OBJECTIVE OF PROPOSED WORK
2. SUMMARY OF PRIOR EFFORTS
3. WORK TO BE PERFORMED AND EXPECTED RESULTS
4. DESCRIPTION OF ANY FOLLOW-ON EFFORTS
5. RELATIONSHIP TO OTHER PROJECTS
6. REPORTING SCHEDULE
7. SUBCONTRACTOR INFORMATION
8. LIST NEW CAPITAL EQUIPMENT REQUIRED
9. DESCRIBE SPECIAL FACILITIES REQUIRED
10. CONFLICT OF INTEREST INFORMATION

SEE NRC MANUAL CHAPTER 1102 FOR ADDITIONAL INFORMATION

APPROVAL AUTHORITY—SIGNATURE

Walter J. Kato

DATE

6/28/84



BROOKHAVEN NATIONAL LABORATORY  
ASSOCIATED UNIVERSITIES, INC.

Upton, Long Island, New York 11973

(516) 282-  
FTS 666/ 3317

Office of the Director

July 2, 1984

Mr. David Schweller, Manager  
Brookhaven Area Office  
U. S. Department of Energy  
Upton, New York 11973

Dear Mr. Schweller:

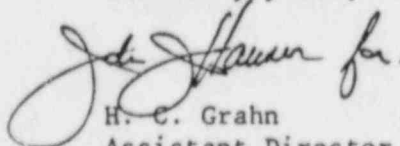
Enclosed is one copy of a proposal without attachments to the Nuclear Regulatory Commission entitled, "Review of Probabilistic Risk Assessment for the Shoreham Nuclear Power Plant," FIN A-3740, being submitted for your review and approval. The proposal is being submitted in response to a request from NRC dated June 22, 1984. Two copies have been sent to Mr. J. Maher, Department of Energy, one copy has been sent to Mr. T. L. DiGaloma, Nuclear Regulatory Commission, and two copies have been sent to:

Ms. Jayne Halvorsen, Program Assistant  
Division of Safety Technology  
Office of Nuclear Reactor Regulation  
Mail Stop 278  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

The total cost of this program is \$284,000. The funds obligated to date are \$270,000.

This proposal has been prepared in accordance with the modification to statement of work attached to the aforementioned letter. If there are any questions regarding the document, please call the principal investigator or Mr. A. J. Romano, FTS 666-4024, Department Administrator for the Department of Nuclear Energy.

Sincerely yours,



H. C. Grah  
Assistant Director  
for Financial Planning

Enclosures

cc: T. L. DiGaloma  
J. Halvorsen (2) ✓  
J. Maher (2)

A/31



June 28, 1984

## PROJECT AND BUDGET PROPOSAL FOR NRC WORK

☐ NEW☒ REVISION NO. 2

PROJECT TITLE			FIN NUMBER					
Review of Probabilistic Risk Assessment for the Shoreham Nuclear Power Plant			A-3740					
NRC OFFICE			NRC S&R NUMBER					
Nuclear Reactor Regulation			20-19-40-41-5					
DOE CONTRACTOR			CONTRACTOR ACCOUNT NUMBER					
Associated Universities, Inc. Brookhaven National Laboratory			04197					
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E. Chow	REG/RRAB	492-4727	09/13/83					
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DOE PROJECT MANAGER								
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PRINCIPAL INVESTIGATOR(S)								
I. Papazoglou	BNL/DNE	666-2435						
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General and Administrative ( 40 % of modified direct cost)			4	72	4			
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CAPITAL EQUIPMENT								
FIN CHARGED:			0	0	0			
TOTAL PROJECT COST			14	255	15			
FY 1984			OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH
MONTHLY FORECAST EXPENSE			26	11	27	17	26	34
(dollars in thousands)			APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
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NRC FORM 189  
(3-81)

U.S. NUCLEAR REGULATORY COMMISSION

FIN NUMBER

## PROJECT AND BUDGET PROPOSAL FOR NRC WORK

A-3740

DATE

June 28, 1984

## PROJECT TITLE

Review of Probabilistic Risk Assessment for the Shoreham  
Nuclear Power Plant

## DOE PROPOSING ORGANIZATION

Associated Universities, Inc.  
Brookhaven National LaboratoryFORECAST MILESTONE CHART: Scheduled to Start — — Completed (Shown in Quarter 1 est)  
PROVIDE ESTIMATED DOLLAR COST FOR EACH TASK FOR EACH FISCAL YEAR

TASK		FY 1983				FY 1984				FY 1985				FY				FY			
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Task 1	SCHEDULE				△					▲											
	COST			14K				200K				5K									
Task 2	SCHEDULE				△	▲															
	COST							20K													
Task 3	SCHEDULE					△				▲											
	COST							35K				10K									
	SCHEDULE																				
	COST																				
	SCHEDULE																				
	COST																				
TOTAL ESTIMATED PROJECT COST				14K				255K				15K									

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9. DESCRIBE SPECIAL FACILITIES REQUIRED
10. CONFLICT OF INTEREST INFORMATION

SEE NRC MANUAL CHAPTER 1102 FOR ADDITIONAL INFORMATION

APPROVAL AUTHORITY—SIGNATURE

Walter J. Kato

DATE

6/28/84



7/21/84

OFFICE OF NUCLEAR REACTOR REGULATION  
PROJECT IDENTIFICATION SUMMARY (PIDS)

TITLE: Review of PRA for the Shoshone Nuclear Power Plant FIN: A37424

CONTRACT NUMBER (Non-DOE):

B&R NUMBER:

NRR OPERATING PLAN  
INDEX NO.:

20-19-40-41-5

DIVISION: DST

BRANCH: KRAB

PROJECT MANAGER: Ed Chow

CONTRACTOR: Brookhaven National Laboratory CONTRACT METHOD: --

CITY, STATE (Non-DOE): Upton, NY

SMALL BUSINESS/MINORITY CONTRACT (Non-DOE)

SUB-CONTRACTOR(S):

YES / / NO / ☒ /

PROJECTED PERIOD OF PERFORMANCE

START: 9/13/83 END: 2/15/85

PROJECTED FINANCIAL DATA (000's)

FEE RECOVERABLE: YES / ☒ / NO / /

TOTAL  
VALUE

CURRENT FY  
BUDGET

NEXT FY  
BUDG

NEXT +1  
BUDG

314K

30K

0

0

APPLICATION (RELATE THE PROJECT TO A SPECIFIC PLANNED ACCOMPLISHMENT)

A132

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WORK REQUIREMENTS (DESCRIBE WHAT IS TO BE PERFORMED)

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The contractor is to perform evaluations to enable the staff to determine whether the risk study submitted in July 1983 accurately assesses the risk from the plant and properly assesses the uncertainties in the various aspects of the risk study. The contractor is to provide support for hearing related to the plant in the area of risk assessment. The contractor will submit a final NUREG/CR in FY 85.

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MODIFICATIONS (DESCRIBE MAJOR CHANGES TO THE PROJECT)

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JUSTIFICATION FOR LICENSE FEE RECOVERABILITY

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COMPLETE AS APPLICABLE -

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Recommended:  
PROJECT MGR.

*gnc*

7/31/84

Endorsed:  
SECTION LDR

\_\_\_\_\_

\_\_\_\_\_

Endorsed:  
BRANCH CHF

\_\_\_\_\_

\_\_\_\_\_

Endorsed:  
ASST DIR.

\_\_\_\_\_

\_\_\_\_\_

Approved:  
DIV. DIR.

\_\_\_\_\_ (Initials)

\_\_\_\_\_ (Date)