



BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.

Upton, Long Island, New York 11973

(516) 282-2444
FTS 666/

Department of Nuclear Energy

March 19, 1985

Dr. A. C. Thadani, Chief
Reliability and Risk Assessment Branch
Division of Safety Technology
Office of Nuclear Reactor Regulation
Mail Stop P-216
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Dr. Thadani:

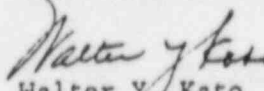
Enclosed is the February monthly report for the activities sponsored by your Branch. Also included are the computerized budget summaries and the fee recovery cost status for each program requiring it. I would suggest that you and your staff review the reports to determine whether there are any discrepancies. If there are, please notify the principal investigator.

Note that the funds allocated for FIN A-3758 have been spent and those for FIN A-3740 are nearly spent. The NRC program office was informed of this March 12, 1985 as required by revised Manual Chapter 1102, dated May 31, 1984. Please send the balance of expected funds so that the level of effort may continue without interruption.

The total amount of unbilled costs through February for FIN A-3758 is \$51,419, which will be billed to NRC when the expected funds arrive.

We hope this meets with your approval. If there are any questions regarding format, distribution, or budget reporting, please contact Mr. A. J. Weiss, Administrative Technical Assistant, FTS 666-4473.

Sincerely yours,


Walter Y. Kato
Deputy Chairman

WYK/jw
Enclosures

cc: R. A. Bari, BNL
F. Coffman, NRC
R. Frahm, NRC
J. Halvorsen, NRC
M. Kaltman, NRC
F. Rowsome, NRC
A. J. Weiss, BNL
NRC Technical Monitors
BNL Technical Monitor

8507130360 850426
PDR FOIA
BELAIR85-199 PDR

THIS COPY FOR

Alst

MONTHLY HIGHLIGHTS FOR FEBRUARY 1985

"Review of the Probabilistic Risk Assessment for the
Shoreham Nuclear Power Plant"

(FIN A-3740)

BNL Principal Investigator: R. Youngblood (FTS 666-2363)
NRC Program Manager: A. Thadani (FTS 492-4705) RRAB
NRC Technical Monitor: Ed Chow (FTS 492-4727) RRAB

← THIS COPY FOR

1. Scope/Purpose

The purpose of this project is to review those aspects of the Shoreham PRA leading to the estimates of the frequencies of the accident sequences resulting in a "core vulnerable" state and to determine the accuracy of these estimates.

2. Schedule/Milestones

A letter of the findings will be submitted to NRC at the completion of each task according to the following schedule.

Task 1: Draft Report	11/15/84
Task 2: Questions to the Applicant	11/30/83
Task 3: Final Report	Two months after receiving final comments by NRC and licensee.

3. Progress to Date

The work on LOCA outside containment was performed. The draft report was sent to NRC.

4. Problems and Delays

None.

5. Next Reporting Period

The Staff and licensee comments will be addressed and incorporated, as appropriate, in the final report.

FINANCIAL STATUS

FEBRUARY 1985

ACCOUNT
004197

T I T L E
SHOREHAM PRA REVIEW

NRC FIN
A-3740

SUPERVISOR : RB

PRINCIPAL INVESTIGATOR : YOUNGBLOOD R.
TERMINATION DATE : 12/31/85

	CURRENT MONTH	YEAR TO DATE
I DIRECT STAFF EFFORT : (S&P Staff Months)	1.00	6.20
II DIRECT SALARIES :	4,725.	30,135.
MATERIAL & SERVICES	0.	9.
ADP SUPPORT :	338.	877.
SUBCONTRACTS :	0.	0.
TRAVEL EXPENSES :	0.	402.
INDIRECT EXPENSES :	2,100.	12,395.
GENERAL & ADMIN. :	3,143.	19,018.
TOTAL COSTS :	10,306.	62,836.
PERCENTAGE OF AVAIL FUNDS SPENT : (FY 84 Carryover + FY 85 Funds Received to Date)		99%

III FUNDING STATUS :

FY 1984
CARRYOVER
(\$ K)

FY 1985 PROJECTED
FUNDING LEVEL
(\$ K)

FY 1985 FUNDS
REC'D TO DATE
(\$ K)

FY 1985 FUNDING
BAL. NEEDED
(\$ K)

53.

30.

10.

20.

FEE RECOVERY COST STATUS

FIN: A-3740

TITLE: SHOREHAM PRA REVIEW

PERIOD: FEBRUARY 1985

TASK/PLANT		\$ PERIOD	\$ FY85 CUMULATIVE
-A Shoreham	Docket 50-322	10,308.	62,837.
TOTALS :		10,308.	62,837.

8

Table 1

Major Milestones for Completion and Publication
of NUREG-0956

- Report of APS Study Group to Commission	February 21, 1985
- Completion of Draft NUREG-0956 (including incorporation of comments and amendments as a result of APS report)	April 9, 1985
- Transmittal to ACRS for review	April 15, 1985
- Commission Paper prepared	May 3, 1985
- Commission Meeting, on or about	May 15, 1985
- Publication of Draft NUREG-0956 for Public Comment	May 24, 1985
- 60-Day Comment Period Complete	July 23, 1985
- Incorporation of Comments and Ready for Final Publication	August 1985

Copies to: Hulman, Muller, Les,
and Houston

These are some first rough ideas
out of industry - F. V. I. Burns

REGULATIONS FOCUSING ON SOURCE TERM
CONSIDERATIONS AND RELATED AREAS

Presented are the results of a limited survey of 10CFR50 and 10CFR100 regulations and related Division 1 regulatory guides for requirements which could be impacted by recent knowledge concerning severe accidents. In particular, this survey focuses on regulations and guides which could be affected by a significant reduction in the fission product source term given an accident and by our latest understanding of containment phenomena. Once the regulations and guides were identified, discussions with a utility's personnel were held to identify those requirements which, if relaxed accordingly, could have the greatest economic advantage to the utility's operations without significantly affecting public health risk based on recent severe accident findings.

This summary represents a quick review of the requirements indicated above and contains the opinions of one utility. A more thorough evaluation is indicated including the input of more nuclear utilities before final conclusions are reached.

AFFECTED AREA of REGULATIONS	SIGNIFICANCE*		
	← LOW	MODERATE →	HIGH →
General	X		
Hydrogen-related			X
Emergency planning			X
Containment leak testing			X
Radiological inventories			X
Accident instrumentation		X	
Equipment qualification	X		

* A measure of the advantages to be gained if regulation requirements in the area indicated were to be relaxed.

AREA	REGULATIONS/ REG. GUIDES	REQUIREMENTS	UTILITY COMMENTS
General	50.34	Evaluation of designs & performance of equipment for preventing & mitigating accidents	-Too vague
Hydrogen related	50.44	Inerting, recombiners, combustible gas control	-Usefulness of recombiners is very limited -Could do more inspections without inerting -Costs of inerting can be significant -Fines incurred due to periods of operation without an inert atmosphere
Emergency planning	50.47, 50.54, 50-App.E, RG-1.101	EPZ determinations, drill & test frequencies, plans...	-Based on lower iodine quantities, a shift could be made from evacuation to sheltering thereby reducing costs -Costs in this area are significant -Public reaction could be negative
Containment leak tests	50-App.A(50), 50-App.J, RG-1.96	Leak requirements tied to tech. specs, tests, test frequencies,...	-Costs associated with valve testing in particular can be significant (often have to relap valves to past tests) -Integrated tests, tests of air locks are not as much a problem
Radiological inventories	100.11, RGs-1.3, 1.4, 1.7, 1.52, 1.140	Dose limits, use of TID14844, iodine & noble gas quantities, filtration equipment...	-Significant costs associated with filtration requirements -Elimination of charcoal filters and reductions in test/maintenance requirements would be beneficial

filtration equipment

AREA	REGULATIONS/ REG. GUIDES	REQUIREMENTS	UTILITY COMMENTS
<i>monitoring</i> Accident instruments	RG-1.97	Instrumentation req'ts.	-Elimination of hydrogen monitors if possible since their operability is doubtful, suffer from calibration drift, qualification problems,...
Equipment qualification	50-App.B, RGs-1.73, 1.89,1.131	Qualification of equipment	-Still have to qualify to some level -If more plateout occurs in an accident than previously thought, radiation doses to equipment could be even higher

Other Utility Comments: The utility personnel interviewed, provided other remarks about the possibility of "relaxing" regulatory constraints. They did support the idea of seeking justifiable regulatory reform and indicated that the utility would probably participate in any such movement. While some advantages appear worthy of further investigation, they were concerned that the opening of rulemaking to obtain regulatory reform may allow for tightening of requirements in other areas and may ~~provide~~ *cause* public relations problems which would have to be overcome. Utilities may be more or less enthusiastic over seeking such reforms depending on their individual circumstances (e.g. soon to be licensed plants may be in jeopardy of having their license delayed pending the outcome of rulemaking hearings). Overall, their response was positive for beginning such an effort.