

Creare INC.
SCIENCE AND TECHNOLOGY
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03755

January 9, 1981

Mr. J. N. Reyes
Mail Stop 1130-SS
Separate Effects Research Branch
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



Dear Mr. Reyes:

SUBJECT: PROGRESS REPORT FOR DECEMBER 1980; CREARE PROJECT
345-12; NRC CONTRACT NO. NRC -04-75-162

On the reporting task, the memo documenting 1/5-scale countercurrent flow data was completed and mailed. Preparation of the camera-ready copy of the Flashing Report was delayed two weeks by the holidays and will be submitted in January.

Excellent progress was made during December in comparing RELAP with Creare data. Without ECC injection we have demonstrated that RELAP4/MOD7 has all the necessary capabilities and that calculations of our baseline data are good. That is, we are in a position to perform specific calculations as needed. Tests with ECC injection are more challenging and more important. We have completed initial comparisons that give accurate pressure transients and that stably calculate plenum inventory depletion, end of bypass, and refill. Using RELAP "as is" the timing of end of bypass and the refill rates are inconsistent with our data however. Prior sensitivity studies with CREFIL and RELAP identified three areas needing model upgrades (particular downcomer slip). These have been implemented (not a trivial effort). Continued data comparisons and model upgrades as required are planned for January.

On the RELAP task, we have also successfully used the accelerated I/O capability together with a post-process plotting routine for comparisons with Creare experimental data. Incidentally, RELAP5/MOD1 was successfully accessed and run for the baseline Creare experiment conditions.

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Mr. J. N. Reyes

On the program coordination task:

- (1) We responded to requests to assist NRC/s 2D/3D group in developing suggestions for tests to be performed in the Cylindrical Core Test Facility (CCTF). We have been reviewing test plans, test results, and facility documents. We expect to produce a memo in January documenting our suggestions.

A separate sub-task has been set up to keep track of funds expended on this task.

- (2) To kick off the CCTF activities, Paul Rothe attended a meeting in Silver Spring during December.
- (3) We responded to a request by LASL to supply them with information on Creare tests to use in code assessment.

After last month's ramp-down in level of effort and spending, we have had to suddenly ramp-up our effort more than we anticipated in order to perform the new 2D/3D activities as well as keep the RIL/RELAP work on schedule. Only part of this ramp up could be accomplished in December. Our priority is going to meeting the schedule on all of these tasks which calls for their simultaneous completion by the end of March. To respond to this need, we have made special arrangements within Creare to temporarily borrow additional staff from other programs and are deferring, perhaps indefinitely, some secondary tasks. We here also acknowledge Bill Beckner's assistance in carefully defining and limiting the scope of 2D/3D activities. With these actions, we feel that this aggressive schedule can be met but we will not pretend that it will be easy.

Sincerely,

CREARE INCORPORATED

Christopher J. Crowley

Christopher J. Crowley
Project Engineer

Paul H. Rothe

Paul H. Rothe
Project Director

CJC:bpb

cc: W. D. Beckner

E. L. Halman

L. H. Sullivan

✓ Distribution Services Branch



To: Dr. L. H. Sullivan
Attention: J. Reyes

Contract: NRC-04-75-162
Creare Project: 345-12
January 8, 1981

SUMMARY SHEET

Purpose of Project: Unchanged

Expected Results: Unchanged

Cost Status:

Funding for the program includes an incremental \$200K for FY81 and FY80 carryover of \$44K for a total program funding of \$244K. As of December 31, 1980, \$93K has been obligated which is 38% of the total funding.

Potential Problems: None Identified

Project Cost and Status:

Task	Allocated FY81	Obligated	Remaining	% Completed
1. Analysis and RIL Support	\$142K	\$64,380	\$77,620	45
2. Reporting	53K	17,955	35,045	34
3. Management & Coordination	34K	8,401	25,599	25
4. CCTF	15K	2,607	12,393	17
Project	\$244K	\$93,343	\$150,657	38

Spending Summary:*

	Spending Increment	Total Spending
October 31, 1980	\$45,212	\$45,212
November 30, 1980	21,027	66,239
December 31, 1980	27,104	93,343

*Note: there is a small change in the numbers for preceding months due to a small error in multipliers in the bookkeeping code.