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INTERIM REPORT

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Contract Program or Project Title: Accident-Induced Flow and Material Transport in Nuclear Facilities

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December 17, 1979

Mr. Donald E. Solberg, Chief
Systems Performance Branch
Office of Nuclear Regulatory Research
US Nuclear Regulatory Commission
MS 1130SS
Washington, DC 20555

Dear Don:

SUBJECT: R-673 MONTHLY PROGRESS LETTER FOR NOVEMBER 1979--ACCIDENT-INDUCED FLOW AND MATERIAL TRANSPORT IN NUCLEAR FACILITIES

We concentrated our effort this month on preparing the first draft of a topical report outlining our proposed analytical and experimental development plans. This report was necessary to meet our scheduled FY 1979 milestones, allowing for a two month delay caused by our performing the Westinghouse walk-through exercise.

In our report we outline our progress under the major areas of

- material transport,
- flow dynamics,
- reentrainment/deposition, and
- experimental plans.

Literature reviews in material transport, fire-induced flow, and reentrainment/deposition were performed. After reviewing selected articles within the literature, we provide a highly preliminary literature assessment that forms a basis for subsequent development plans.

The most fundamental basis in the development plans is that they will evolve through a series of analysis levels--from simple approaches to the more complex. Our reasons for proceeding in this manner are that

NRC Research and Technical Assistance Report

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- the Nuclear Regulatory Commission can exercise more program flexibility,
- the approach will be cost-effective,
- early versions of the models can be developed,
- model development can proceed without clear accident definition,
- the need for proper interfacing between contractors is minimized, and
- the approach provides flexibility for those responsible for source term experimentation.

In the report, experimental plans are outlined covering two major areas: 1) semi-empirical model data, and 2) computer code verification. In addition, experiments on fire dynamics, not yet included in the Schedule 189's, were identified.

Our budget status is $21.9 K spent in November 1979 with a FY 1980 cumulative total of $39.2 K. Please call if you have any questions.

Sincerely,

Dick Martin

Richard A. Martin

Bill

William S. Gregory

RAM/WSG:jr

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