INTERIM REPORT

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Prepared for
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

INTERIM REPORT

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June 11, 1979

Mr. Mel Silberberg, Chief
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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mel:

Program Title/Activity Identification

Aerosol Measurements and Modeling for Fast Reactor Safety.

Current Progress and Technical Highlights

During March, major efforts were concerned with continuing the UO_2 aerosol properties measurements, making minor adjustments to the CRAB code, writing the CRAB code users manual, and making preparations for the CSNI meeting by compiling comments on the draft report and running the HAARM-3 code for special CSNI comparison cases.

The UO_2 aerosol characterization studies proceeded by performing separate experiments to determine relative source strengths for UO_2 particle generation using the CO_2 laser and for Na particle generation using induction heating. Variable parameters were the illumination period for UO_2 and quantity of Na placed in the induction crucible. "Source strength" was measured by determining the total amount of particulate suspended in the generation cell. The correlations of suspended mass versus source parameter will be used to effect the desired mass ratios of Na-UO_2 for the mixed aerosol experiments. The analysis procedure for detecting ug amounts of UO_2 using a fluorometric technique was worked out satisfactorily.

Anticipated Accomplishments for April

During April it is anticipated that UO_2 characterization experiments will continue and preparation of the CRAB code users manual should be nearly complete. Evaluation of resuspension data will be pursued by modifying the HAARM-3 code to include a resuspension rate term.

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The estimated and actual cumulative costs are shown in Figure 1.

Sincerely,

James A. Gieseke, Research Leader
Physico-Chemical Systems, Atmospheric
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JAG:ld

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