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Author(s): Jofu Mishima

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June 8, 1979

D. E. Solberg, Project Manager
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Dear Don:

ACCIDENT AEROSOL CHARACTERIZATION -- MAY MONTHLY REPORT

This is the initial month for this project and the principal effort has been directed toward planning and preparation. Because of the long gestation period for this project and its mid-year starting time, prior commitments reduced the effort that could be applied to this project. The initial spending rate is low (approximately 66% of a linear rate) but the problems should be resolved in the next few months. The major problem in the near future is finding adequate space for the Task E and F experimental phases. We are currently discussing modification of some adjacent areas which presently hold contaminated test facilities. A major stumbling block is finding adequate funding for the necessary modifications.

TASK A. PROJECT MANAGEMENT

A meeting of task leaders and key participants was held on April 24 to discuss the project objectives and scope, milestones and schedules, and funding. Task outlines and schedules have been received for all tasks. A revised FY '79 and a FY '80 project proposals were prepared. A project development plan is in progress.

TASK B. DEFINE MAJOR, CREDIBLE ACCIDENTS FOR EXISTING OR PLANNED MIXED OXIDE FUEL FABRICATION PLANTS

Currently available documentations are being processed into a key word compilation. Adequate documentation to define major accidents appears to be available for seven mixed oxide fuel fabrication plants: Babcock and Wilcox Plutonium Plant at the Parks township site in Pennsylvania; Westinghouse's Plutonium Fuel Development Laboratories at Cheswick, Pennsylvania; General Electric's Advanced Fuels Plant at the Vallecitos Nuclear Center, California; Exxon Nuclear's Mixed Oxide Fuel Plant at Richland, Washington; Kerr-McGee's Plutonium Fuels Plant at Cimarron, Oklahoma (currently awaiting decommission); Westinghouse's Recycle Fuels Plant proposed for Anderson, South Carolina; and Hanford Engineering Development Laboratory's proposed High Performance Fuel Laboratory at Richland, Washington. A preliminary look indicates that there is a vast difference in criteria used by various authors in selecting accidents labeled "Design Basis Accident," "Maximum Credible Accident," etc.

D.E. Solberg
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TASK C. LITERATURE REVIEW OF INFORMATION AVAILABLE FOR
CONSEQUENCE ASSESSMENT

Document compilation for this task is being performed concurrently with those in Task B. Initial attempts to outline our approach to an airborne release assessment methodology have been made. We have received a key word document compilation from Ed Compere, ORNL, on selected areas from the RECON program and have discussed the areas of major interest in Argonne's (Muraka) program.

TASK D. EXPERIMENTS TO DEFINE CHARACTERISTICS OF AEROSOLS
GENERATED UNDER ACCIDENT CONDITIONS

Task milestones, schedules and manpower requirements for FY '79 were prepared. Work is progressing on an initial experimental matrix. Preliminary discussions were held and conceptual sketches prepared for modification of the Radioactive Aerosol Release Tank and wind tunnel in the 242-B facility.

TASK E. EXPERIMENTS TO DEFINE THE TIME DEPENDENT BEHAVIOR OF ACCIDENT-
GENERATED AEROSOLS IN CONSTRAINED VOLUMES

Task planning estimates were prepared. Equipment (test glovebox and measurement instrumentation) and space are major concerns requiring early resolution. Preliminary discussions were held to determine the effort required to clean out and modify rooms 1 and 2 of the 242-B building for this work. A preliminary estimate was authorized. Contingency plans for an experimental matrix if the area is not available or modifications cannot be made in a timely fashion are underway. J. A. Glissmeyer visited Los Alamos Scientific Laboratory to discuss interface requirements and particulate behavior models with Messrs. Gregory, Martin and Hirt.

TASK F. EXPERIMENTS TO DEFINE VENTING OF ACCIDENT-GENERATED AEROSOLS
FROM CONTAINMENT

Estimates of FY '79 task milestones, schedules and requirements were prepared.

TASK G. AEROSOL BEHAVIOR MODELS

P. C. Owzarski visited LASL with J. A. Glissmeyer (see Task E).

If there any questions, please contact me.

Sincerely,

A handwritten signature in cursive script, appearing to read "Jofu".

Jofu Mishima
Particulate & Gaseous Waste Research
Atmospheric Sciences Department

dj

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