UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUL 28 1978

File RRG - Fuel Cycle
cc: Proj's A-7039
B-0425
B 2287

9.3.2

MEMORANDUM FOR: Charles B. Bartlett, Chief
Systems Performance Branch, SAFER

FROM: Donald E. Solberg
Systems Performance Branch, SAFER

SUBJECT: FUEL CYCLE FACILITIES EFFLUENT CONTROL AND WASTE TREATMENT RESEARCH REVIEW GROUP

A Research Review Group meeting was held on July 11, 1978. Meeting attendees are presented in Table 1. The results of that meeting are summarized below:

1. The plans for this study have generally assumed that reference fuel cycle facility designs would be selected for study. An example would be the design being developed for the Probabilistics Analysis staff for risk assessment of fuel reprocessing. However, review group members agreed that a preferred approach would be to review fuel cycle facility designs, both of current design and those proposed for alternate fuel cycle facility designs and select for study those unit operations that these have in common. These unit operations would be identified for further evaluation, specific unit operation data obtained, accident scenario identified, etc. Joe Mishima (PNL) and Hershel Godbee (ORNL) agreed to quickly review available literature to make an initial assessment of commonly used unit operations. This initial review would include alternate fuel cycles.

2. The suggestion was made that use of actual fuel cycle accident information for validation of the analysis methods developed as part of the program would provide greater confidence in the analysis capability than would otherwise result. These data would also be helpful in identifying significant accidents based on these experiences.*

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* In a later conversation with F. Costanzi (SD) he stated that in a technical assistance contract he has with N. Frigerio (ANL), accident experience at fuel cycle facilities and at power plants is being documented and analyzed.

TABLE 1

ATTENDEES

J. Ayer, NMSS*

A. T. Clark, NMSS*

E. Wick, NMSS*

D. Solberg, RES *

G. Terry, NMSS

W. Gregory, LASL

R. Martin, LASL

L. Horack, LASL

E. Frederick, ORNL

H. Godbee, ORNL

T. Malinauskas, ORNL

J. Mishima, PNL

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* Review Group Members

3. Natural phenomena will not require separate investigation by this program. It is not anticipated that the accidents caused by natural phenomena will differ basically from those resulting from other causes (e.g., pipe rupture may result from many causes, including earthquakes, but there is no reason to believe the consequences or the methods used to analyze the accident will differ on the basis of the initiating mechanism). However, in setting up parameters for suspension of particulates by high-velocity winds, it will be necessary to include in the range of velocities at which tests are performed values appropriate for tornado transients.

4. In response to our request for information on the personnel to be assigned to these projects and provide resumes for each, the following responses were obtained:

   - LASL responded that this is contrary to their policy,
   - ORNL supplied the enclosed list of principal investigators (additional ORNL personnel would be used as required),
   - PNL supplied resumes for L. C. Schwendiman, J. Mishima, P. Owzarski, J. A. Glessmeyer, S. L. Sutter, and K. R. Ames.

   Any review group members interested in reviewing these resumes may do so in my office.

5. ORNL will submit a modified 189a and cost estimate based on scope changes discussed at this and previous meetings (e.g., experimental work on semi-volatile materials).

Donald E. Solberg
Systems Performance Branch, SAFER

Enclosure: ORNL Personnel List

cc w/enclosure: L. Rouse, NMSS
R. Starostecki, NMSS

ENCLOSURE

PRINCIPAL INVESTIGATORS ON PROJECT AT ORNL

- R. A. Lorenz is a Chemical Engineer with experience with fission product release experiments who will have responsibility for the experimental part of project, (i.e., behavior of semi-volatile fission products).

- V.C.A. Vaughn is a Ph.D. Chemical Engineer in charge of hot cell operations at ORNL. He will be responsible for that part of the experimental work performed in the hot cell.

- H. W. Godbee is a Ph.D. Chemical Engineer who will share responsibility with J. W. Roddy, a Ph. D. Physical Chemist, for evaluation of unit operations, definition of accident scenarios, etc., for fuel cycle facilities (excluding fuel fabrication facilities which were assigned to PNL).