

LETTER REPORT

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Contract Program or Project Title: Definition of Scenarios and Evaluation of
Methods for Analyzing Source Terms of Major Accidents Involving UF₆ at NRC-Licensed
Subject of this Document: Progress reported for OCT 82 Fuel Cycle Facilities

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LETTER REPORT



UNION CARBIDE CORPORATION

NUCLEAR DIVISION

P. O. BOX X, OAK RIDGE, TENNESSEE 37830

November 16, 1982

Mr. S. Bernstein
Transportation and Materials
Risk Branch
Division of Risk Analysis
Office of Nuclear Regulatory
Research
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Bernstein:

Attached is our monthly progress report covering October 1982 activities of the UF₆ Accident Analysis Handbook project (FIN B0495-2). In October, \$20,438 were spent. Expenditures so far through the end of October total \$120,324.

Sincerely,

M. Siman-Tov

MS/cw

Attachment

cc: G. F. Flanagan
A. L. Lotts
D. W. Sheffey, DOF-ORO
E. O. Sternberg

cc/att: W. S. Gregory, LANL
P. C. Owczarski, BPNL

PROGRAM TITLE: Definition of Scenarios and Evaluation of Methods for
Analyzing Source Terms of Major Accidents Involving
UF₆ at NRC-Licensed Fuel Cycle Facilities

PROJECT MANAGER: M. Siman-Tov

ACTIVITY NUMBER: ORNL #41 88 55 05 6 (189 B0495-2) NRC 60 19 21

TECHNICAL HIGHLIGHTS:

Task 1. Literature Review and Scenario Identification

Task 1H. The interim progress report was completed and sent to S. Bernstein (NRC-RES) on October 20, 1982. Copies were also sent to W. S. Gregory (LANL) and P. C. Owczarski (BPNL).

Task 1I. Results documented in the interim progress report are being expanded and will be brought together into an interim draft report due in late December.

Task 4. Preparation of Final Draft Documentation

Task 4C. The UF₆ release scenarios given in the interim progress report are being categorized into generic events. For example, overheating a normally filled cylinder, heating an overfilled cylinder, heating a defective cylinder, etc., have similar release characteristics and, therefore, could be categorized as a single generic event.

For each generic event, we will attempt to (1) physically describe the event phenomena, and (2) identify the types of analytical tools needed for developing UF₆ source terms.

A list of available analytical tools known to us may also be provided. This information will be summarized in the December interim draft report.

MEETINGS AND TRIPS:

None

REPORTS, PAPERS AND PUBLICATIONS:

The September interim report was forwarded to NRC on October 20, 1982. The report documents results of activities described under Task 1 and Task 3 of NRC's 189 for this project and performed between May and September 1982.

In particular, the report presents a list of 25 UF₆ release accident scenarios and a review of available methods used by NRC-licensed and others for determining source terms for UF₆ releases.