

INTERIM REPORT

Accession No. _____

Contract Program or Project Title:

Steam Generator Tube Rupture Iodine Transport Mechanisms

Subject of this Document:

Steam Generator Tube Rupture Iodine Transport Mechanisms

Type of Document:

Monthly Progress Report for October, 1979

Author(s):

R. S. Denning

Date of Document:

November 12, 1979

Responsible NRC Individual and NRC Office or Division:

R. Sherry
Division of Reactor Safety Research

This document was prepared primarily for preliminary or internal use. It has not received full review and approval. Since there may be substantive changes, this document should not be considered final.

BATTELLE
Columbus Laboratories
505 West King Avenue
Columbus, Ohio 43201

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

INTERIM REPORT

NRC Research and Technical
Assistance Report

1402 013

7911280 308



Columbus Laboratories
505 King Avenue
Columbus, Ohio 43201
Telephone (614) 424-6424
Telex 24-5454

November 12, 1979

Mr. Richard Sherry
Fuel Behavior Research Branch
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Sherry:

Program Title/Activity Identification

This is the second monthly report for the project Steam Generator Tube Rupture Iodine Transport Mechanisms, which is Task 12 of agreement NRC-04-76-293.

Progress and Technical Highlights
for October, 1979

Revisions to the buff book chart were received which are acceptable.

Task I

The design of the experimental apparatus proceeded as scheduled with the detailed specifications of both the flow and diagnostics systems nearing the point where fabrication of components can begin. Standard ASME design procedures for pressure vessels, available as a computer code, were used to specify locations and sizes for viewing ports to be used in the drop size diagnostic section. In general, the overall system design is consistent with the originally proposed system with the exception that the receiver tank water will be heated externally and circulated through the tank. In addition, greater flexibility is being provided in adjusting the distance between the high pressure spray injection point and the drop measurement plane such that greater distances can be accommodated if it becomes necessary.

Task II

Activities this month centered on the development of a detailed work plan and the initiation of work. Effort was devoted to the description and modeling of thermal-hydraulic conditions in both U-tube and once-through steam generators. Modeling efforts were begun for iodine behavior and for aerosol transport and deposition of water droplets. A conceptual framework was developed for the computer code which will be used to guide the direction of the modeling activities.

NRC Research and Technical
Assistance Report

1402 014

Anticipated Activities in November

Task I

During November, the final detailed design for the experimental equipment will be completed and the purchase and fabrication of system components will be initiated. The estimated completion date for the design is November 22, which is within one week of the target.

Task II

Efforts will continue in the modeling of thermal-hydraulic, vapor and aerosol transport mechanisms.

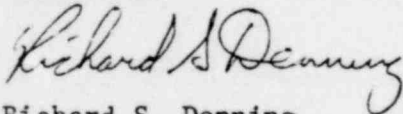
Costs

Costs for October were \$15,845 including a fee of \$1,185. These are also the cumulative expenditures on the program. Monthly expenditures are shown in Figure 1.

Disclaimer Notice

This informal document contains information of a preliminary nature and was prepared primarily for interim use in light water reactor programs in the U.S. Thus, it is subject to revision or correction, does not constitute a final report, and should not be cited as a reference in publication.

Sincerely,



Richard S. Denning
Research Leader
Nuclear and Flow Systems Section

RSD/sm

Enc.

cc: G. Chipman
L. Soffer
F. Akstulewicz
L. Barrett
W. Pasedag
M. Fleishman
W. Johnston
L. S. Tong
NRC Public Document
Room (2)

1402 015

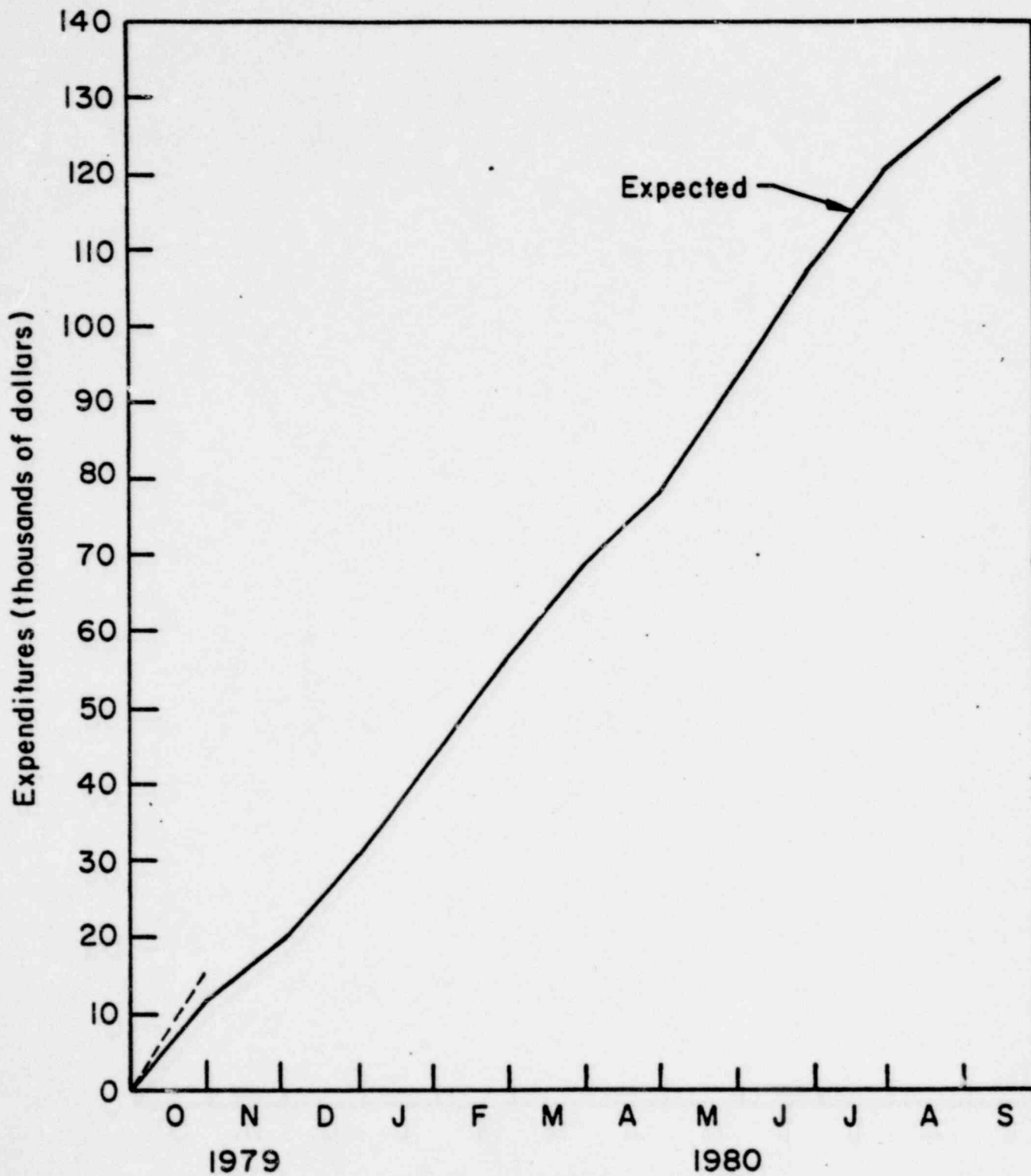


FIGURE 1. EXPENDITURES

1402 016