

NRC Research and Technical  
Assistance Report

INTERIM REPORT

March 31, 1981

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Contract Program or Project Title: Investigation of Ventilation Component

Response to Large-Pressure Pulses

Subject of this Document: Progress report for January 1981

Type of Document: Informal monthly progress report

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Responsible NRC Individual and NRC Office or Division: \_\_\_\_\_

Donald E. Solberg, Chief, Systems Performance Research Branch, SAFER:RES

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.

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

NRC FIN No. A7028

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INTERIM REPORT

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IN REPLY  
REFER TO:  
MAIL STOP:

WX-8-4124 (R295)  
777

March 20, 1981

Mr. D. E. Solberg, Chief  
Systems Performance Branch  
Division of Safeguards, Fuel Cycle  
and Environmental Research  
US Nuclear Regulatory Commission  
MS 1130SS  
Washington, DC 20555

Dear Don:

SUBJECT: R295 MONTHLY PROGRESS LETTER FOR JANUARY 1981--INVESTIGATION  
OF VENTILATION COMPONENT RESPONSE TO LARGE-PRESSURE PULSES

We are continuing to use the monthly report format introduced last  
month. Please let us know if you have any questions or comments.

Sincerely,

*Bill*  
William S. Gregory

*Jon*  
H. L. Horak

WSG/kmt

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NRC Research and Technical  
Assistance Report

PROGRAM STATUS REPORT

TITLE: Experimental Evaluation of Ventilation System Components  
During Large-Pressure Pulses

PROJECT NO: R295

FIN NO: A7028

CONTRACTOR: Los Alamos National Laboratory

MONTH COVERED: January 1981

BUDGET STATUS: Annual Budget \$260 k (includes FY 1980 carryover of \$250 k and  
planned carryover to FY 1982 of \$65 k)

Monthly spending : \$ 45.0 k  
Cumulative Spending: \$106.1 k  
Funds Remaining : \$153.9 k

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I. PROGRAM DESCRIPTION

The objective of this program is to experimentally evaluate the performance of ventilation system components subjected to simulated tornado environments.

The high-efficiency particulate air (HEPA) filter is considered to be the most crucial ventilation system component for maintaining the confinement of radioactive particulates. Therefore we selected this component for initial study and evaluation. We have determined the structural response of standard nuclear-grade HEPA filters for major tornado parameters (peak pressure, pressurization rate, and duration) and major filter characteristics (pack tightness, air flow direction, pack thickness, separator type, faceguards, particulate loading, manufacturer, and medium strength).

In FY 1981 we will determine the filtration efficiency of these filters for simulated tornado transients. Other components to be evaluated in FY 1981 are centrifugal and axial fans.

## II. HIGHLIGHTS/SIGNIFICANT MONTHLY ACTIVITIES

Data Acquisition - Two methods of transferring digital test data to the data base of the Los Alamos computers are being implemented. The primary means will be by transmission through New Mexico State University's (NMSU) tie line to Santa Fe and Los Alamos at approximately 1200 baud. A backup means is by transporting a 9-track ASK11 magnetic tape. The tape will be transferred to the VAX system and then into LTSS.

Laser Anemometer/Particle Counter (B.1.b and B.1.c) - NMSU's compact design of the long-reach (13-in.) laser anemometer/counter has been assembled and tested. A second system is now being made.

Blower Testing (B.4.a) - Dynamic testing of the 24-in. centrifugal blower is now scheduled to begin on February 2, 1981.

Reporting - We are preparing a presentation for a program review in Washington on February 28, 1981. The briefing will emphasize the results of the test of HEPA filter structural response to simulated tornado loadings. The status of other project activities will also be reported.

## III. PROGRAM DEVELOPMENT VARIANCE

There were no significant program development variances this month (see Fig. 1).

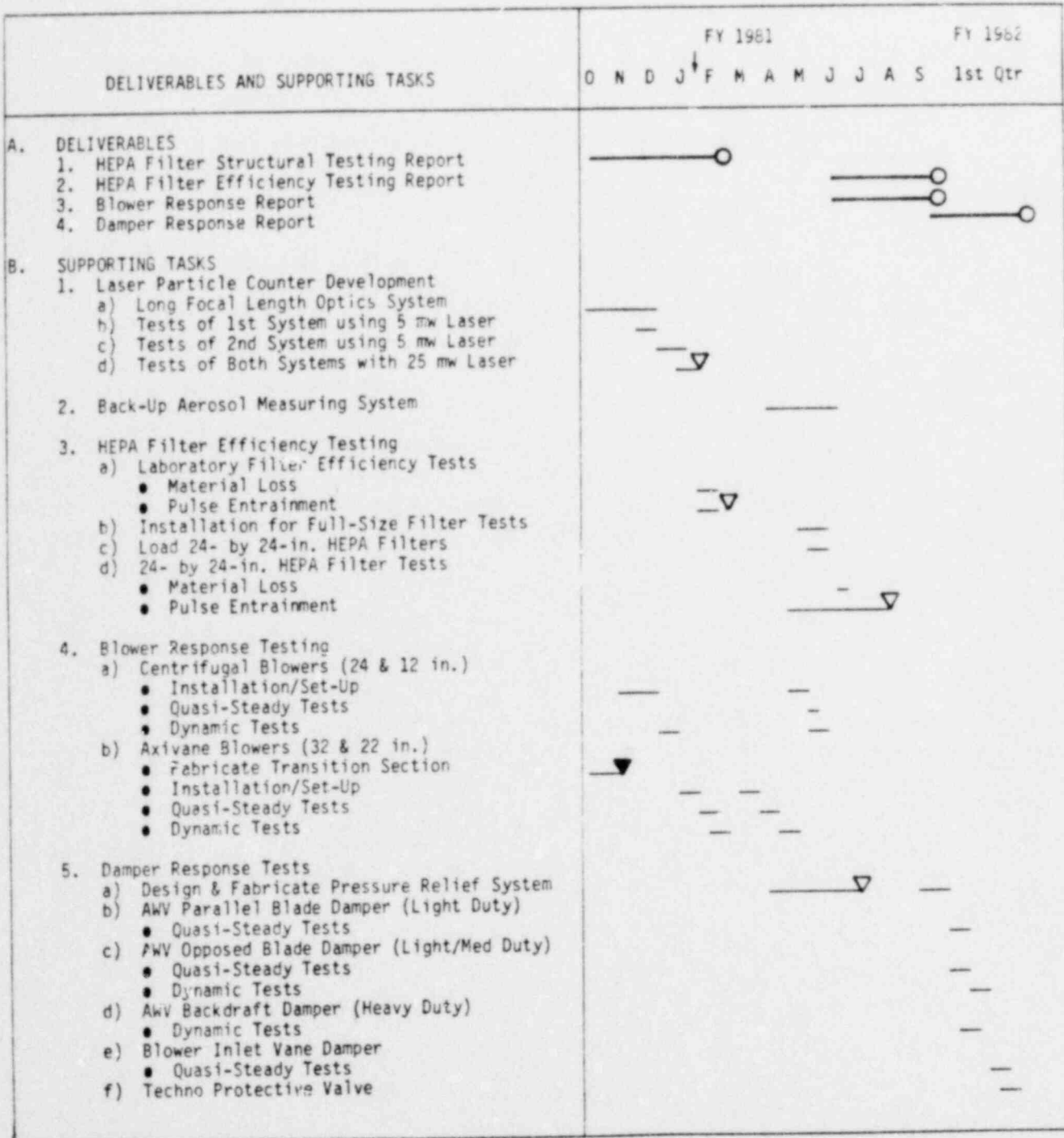
## IV. BUDGET VARIANCE

The actual and planned budgets are shown in Fig. 2. This month our cumulative budget is running \$32.1 k over the planned budget. This has been caused mainly by a change in the timing of the NMSU subcontract billing.

## V. PROBLEMS AND ISSUES

At this time we have no problems or issues to discuss.

FY 1981 PROGRAM DEVELOPMENT SCHEDULE



LEGEND

- Topical Report,      ● Topical Report Completed
- △ Progress Report,    ▲ Progress Report Completed
- ↓ Time Now
- ▽ Intermediate Milestone
- \* Identification of Task Causing Variation
- Activity Line
- Scheduled Variation

Fig. 1.

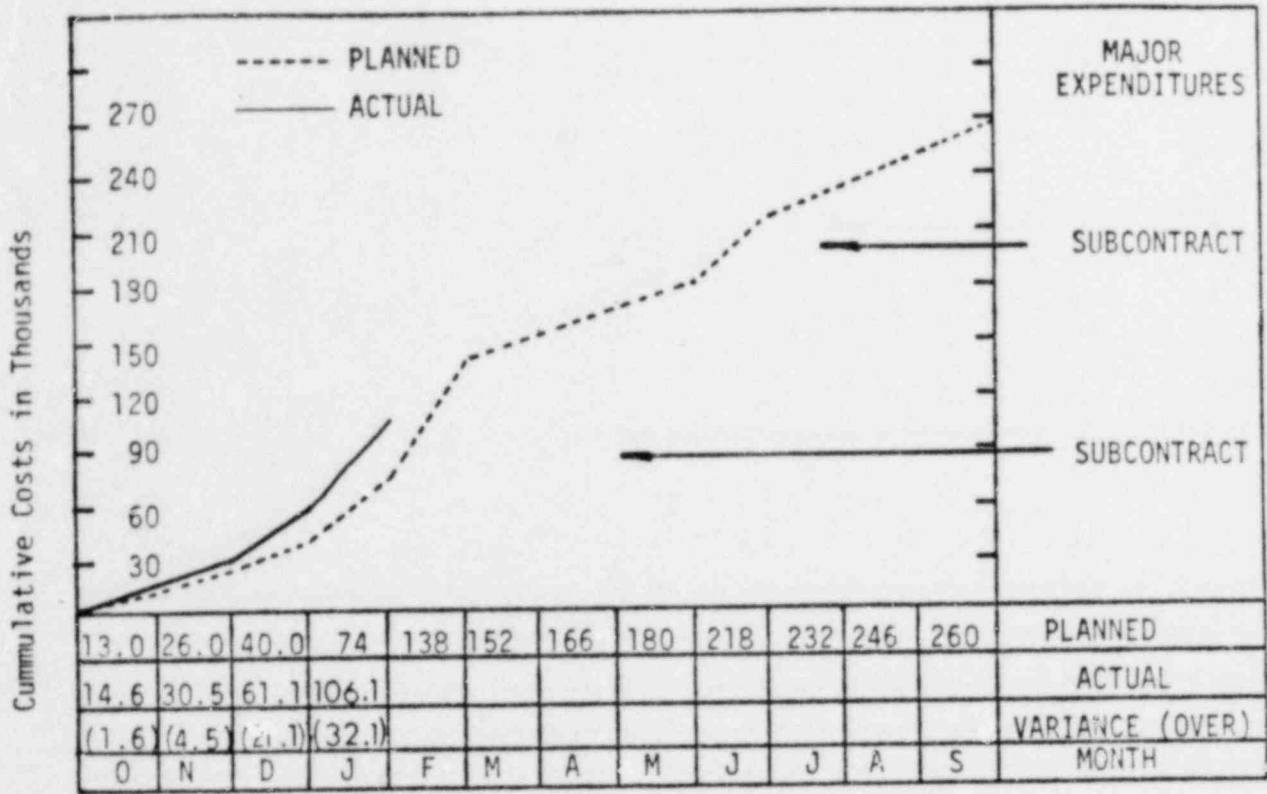


Fig. 2.  
Operating costs in thousands.