

INTERIM REPORT

May 28, 1980

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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  
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Washington, D.C. 20555

DISTRIBUTION  
R. Bangart, NRR

NRC FIN No. A6075

INTERIM REPORT

NRC Research and Technical  
Assistance Report

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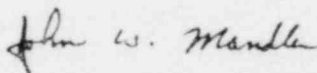
Mr. R. E. Wood, Director  
Energy and Technology Division  
Idaho Operations Office - DOE  
Idaho Falls, ID 83401

TRANSMITTAL OF APRIL, 1980 MONTHLY PROGRESS REPORT FOR LWR IN-PLANT  
MEASUREMENT PROGRAM - Mand-18-80

Dear Mr. Wood:

Attached is the monthly progress report for the LWR In-Plant Measurement  
Program (project No. A6075) for the month of April, 1980.

Sincerely yours,



John W. Mandler  
Applied Physics Branch

jr

Attachment:  
As stated

cc: B. R. Dickey, ENICO  
W. A. Emel, ENICO  
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R. W. Kiehn, EG&G Idaho

NRC Research and Technical  
Assistance Report

**TECHNICAL PROGRAM PROGRESS REPORT**

|                              |   |   |
|------------------------------|---|---|
| Idaho<br>OPERATIONS OFFICE   | Physics Division<br>DIVISION                            | April 1980<br>PERIOD REPORTED             |
| 40 10 01 064<br>ACTIVITY NO. | Environmental and Fuel Cycle Research<br>ACTIVITY TITLE | J. W. Mandler/5-15-80<br>PREPARED BY DATE |
| A6075<br>CONTRACTOR PROJ NO  | Source Term Measurements at PWR's<br>PROJECT TITLE      | I-399<br>REF (FROM) PROPOSAL<br>DOE (88)  |

TECHNICAL PROGRESSAchievements This Month:A. Program Planning and Measurements1. Summary Report:

Work on the summary report continued during April. The data analysis was completed and first draft versions of most of the sections of the report were written. The major conclusions were discussed with NRC representatives on 4/30/80.

2. Remote Monitoring Subtask:

Work on this subtask continued during April. Progress on this task (including a brief review of the state-of-the-art of remote monitoring) was discussed with NRC representatives on 5/1/80. At this meeting a suggestion was made to organize a workshop on remote monitoring to be held in Washington, D. C., during the summer. EG&G will attempt to organize this workshop.

3. Radionuclide Transport Subtask:

Work on the subtask to assess current knowledge about radionuclide transport around the primary system of a reactor continued during the month. The major emphasis involved reviewing pertinent documents obtained during the literature search.

4. Fifth PWR:

Selection of the fifth PWR to be studied and the main emphasis of the measurements to be performed there were discussed with NRC representatives on 4/30/80. Since a major objective of the program is to study primary-to-secondary leaks, Prairie Island (W), Crystal River (B&W), and Point Beach (W) were suggested as candidates for the fifth PWR because they currently have primary-to-secondary leaks. The suitability of these PWR's for use as the fifth PWR will be investigated.

In addition to studying primary-to-secondary leaks, other areas of major emphasis were discussed with the NRC. R. Bangart (NRC) listed the following as priority areas for study at the next PWR:

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4. Fifth PWR: (cont'd)

1. Characterization of liquids to be solidified and shipped off-site.
2. Identification and characterization of specific gaseous sources.
3. Iodine behavior in the containment (i.e., deposition and resuspension).
4. Characterization of the propagation of a spike through the plant.
5. More information concerning filter DF's.

F. Witt (NRC) identified the following as additional priority areas:

6. Further characterization of iodine spiking.
7. Study of crud and crud transport in the primary system (including chemistry, particle size distribution).
8. Measurements of dose and dose rates around the primary system.  
Measurement of the increase in dose rate due to crud buildup.

Since priority items 7 and 8 are currently not within the scope of the In-Plant Source Term Measurement Program, a brief study will be performed to determine the magnitude of the effort required to perform 7 and 8. The results of this brief study will be transmitted to the NRC.

B. Reports Issued This Month

None

C. Expenditures

|                  | <u>Budget</u> | <u>Actual</u> |
|------------------|---------------|---------------|
| April, 1980:     | \$50K         | <\$5.1K>*     |
| FY 1980 to date: | \$335K        | \$335.3K      |

\*The credit during April was due to reimbursement to the In-Plant Source Term Measurement Program for work performed for the NRC Lessons Learned Task Force.

## TECHNICAL PROGRAM PROGRESS REPORT

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OPERATIONS OFFICEPhysics Division  
DIVISIONApril 1980  
PERIOD REPORTEDD. Expected Accomplishments Next Month

1. Continue preparation of the summary report.
2. Continue review of technique development for remote monitoring subtask.
3. Continue work on subtask concerning radionuclide transport in reactor primary system.