

INTERIM REPORT
NRC Research and Technical
Assistance Report

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or Project Title: Advanced Instrumentation for Reflood Studies

Subject of this Document: Report of Foreign Travel of J. O. Hylton,
I&C Division, for the Advanced Instrumen-
tation for Reflood Studies (AIRS) Program

Type of Document: ORNL Foreign Trip Report

Author(s): J. O. Hylton

Date of Document: June 28, 1979

Responsible NRC Individual
and NRC Office or Division: W. S. Farmer, Manager, 2D/3D Reflood
Program, NRC - FTS 427-4272

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Oak Ridge, Tennessee 37830
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ORNL

FOREIGN TRIP REPORT

ORNL/FTR-633

DATE: June 28, 1979

SUBJECT: Report of Foreign Travel of J. O. Hylton, I&C Division, for the Advanced Instrumentation for Reflood Studies (AIRS) Program

TO: Herman Postma

FROM: J. O. Hylton

PURPOSE: To finalize design details of two-phase flow instrumentation that will be built by ORNL for installation in the Japanese Slab Core Test Facility at Tokai, Japan.

SITES VISITED:

6/11-12/79	Japan Atomic Energy Research Institute (JAERI)	Tokai, Japan	K. Hirano Y. Sudo S. Sobajima
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ABSTRACT:

Meetings were held on the above dates between representatives of ORNL, USNRC, JAERI, and Ishikawajima-Harima Heavy Industries (IHI). Interface and design details of ORNL instruments were reviewed and most of the information required to complete the design of the sensors was obtained. Other discussion topics included possible measurement problems in the test facility, tentative test plans and procedures, construction schedules, and instrument delivery dates.

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REPORT

A preliminary design meeting between ORNL and Japanese representatives was held in January 1979. The preliminary meeting resulted in agreement on basic design concepts and installation methods. Additional information requirements were identified and both parties subsequently exchanged detailed design drawings. The purpose of this meeting (June 11-12, 1979) was to review the detailed designs and resolve any remaining problems prior to beginning construction of the instruments and the test facility.

The engineering and construction contractor (IHI) for the SCTF facility provided additional drawings of the pressure vessel and its internal structures. Agreements were reached on the location of measurement points and the details of support and attachment for all ORNL sensors except the wall mounted film probes. Final details for these probes will be determined by July 31, 1979, when IHI completes the testing of the thermal insulator into which the probes are to be installed.

ORNL provided information on the operation of the sensor electronics and the effects of sensor cable length on measurement accuracy. Requirements for the data acquisition system were reviewed and final agreement was reached on the number of recorder channels and the minimum sampling rates.

The information gained in this meeting is sufficient to complete the design and begin fabrication of all ORNL sensors except as noted above. It is not anticipated that another design meeting of this nature will be required. The next time that ORNL personnel will be needed to visit the Slab Core Facility will probably be for the assembly of the first core bundle in April 1980.

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APPENDIX AItinerary

June 11-12, 1979

Attended SCTF Instrumentation Meeting
in Tokai, JapanPersons Contacted to a Significant ExtentU.S. ContactsP. S. Damerell (MPR)
C. K. Lewe (NUS)JAERI ContactsY. Fukaya
K. Hirano
T. Iguchi
Y. Murao
K. Sekiguchi
S. Sobajima
Y. Sudo
N. Suzuki
T. WakabayashiTRI ContactsK. Harada
Kobayashi
T. Nishibe
K. Watanabe

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APPENDIX BListing of Literature Acquired

1. Drawings by IHI giving the following information:
 - a. SCTF vessel details
 - b. Heated and non-heated core rod details
 - c. Details of spacer grids
 - d. Details of core support plate and end boxes
 - e. Details of upper plenum internal structures
 - f. Details and location of penetration nozzles

2. Sketches and documents by JAERI giving the following information:
 - a. Revised quantities and locations of U.S. instrumentation
 - b. List of measurement and data acquisition requirements for SCTF-I

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DISTRIBUTION

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43. D. B. Trauger
44. T. J. Paulus, E G & G Oak Ridge
45. R. E. Rice, E G & G Idaho
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