

INTERIM REPORT

Accession No. _____

Contract Program or Project Title: Advanced Reactor Safety Analysis
Technical Assistance, Reactor Projects

Subject of this Document: Monthly Highlights for February, 1980

Type of Document: Monthly Highlights

Author(s): Robert A. Bari

Date of Document: March 6, 1980

Responsible NRC Individual
and NRC Office or Division: Dr. Themis P. Speis, Chief
Advanced Reactors Branch
Division of Project Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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.

Brookhaven National Laboratory
Upton, NY 11973
Associated Universities, Inc.
for the
U.S. Department of Energy

Prepared for
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555
Under Interagency Agreement DE-AC02-76CH00016
NRC FIN No. A-3000

INTERIM REPORT
NRC Research and Technical
Assistance Report

MONTHLY HIGHLIGHTS

for

February 1980*

PROGRAM: Advanced Reactor Safety Analysis
Technical Assistance, Reactor Projects
Fin No. A-3000

Robert A. Bari, Group Leader

Engineering and Advanced Reactor Safety Division
Department of Nuclear Energy
BROOKHAVEN NATIONAL LABORATORY
Upton, New York 11973

*Work carried out under the auspices of the United States Nuclear Regulatory Commission.

NRC Research and Technical
Assistance Report

MONTHLY HIGHLIGHTS

TASK I. ACCIDENT ANALYSIS (R. A. Bari)

Low Heat Flux Sodium Boiling (K. R. Perkins)

Experiments presented by F. Namekawa et al. at the Specialists' Meeting on Decay Heat Removal at BNL indicate that in some flow regimes void formation can be detrimental to natural circulation flow rates. While these experiments were performed with water/air mixtures, they do indicate the need for caution in applying analytical results (e.g., SAS) which tend to show that voiding is always beneficial to natural circulation.

TASK II. POST-ACCIDENT CONTAINMENT ANALYSIS (W. T. Pratt)

FFTF Containment Venting (S. S. Tsai)

A memorandum describing our review of the proposed FFTF containment venting/filtering system has been completed. Comments on the draft memorandum were obtained from H. B. Holz of the NRC. Discussions were also held with G. D. Bouchey of the FFTF Project Office. A revised memorandum incorporating the comments and recent design changes made to the capacity of the water storage basin is being prepared.

TASK III. PLANT DYNAMICS AND RELIABILITY ANALYSIS (R. A. Bari)

FFTF Natural Circulation Test Program (K. R. Perkins)

Informal discussions were held with HEDL personnel and others attending the Specialists' Meeting on Decay Heat Removal at BNL.

TASK IV. REACTOR PHYSICS (H. Ludewig)

Heterogeneous LMFBR Cores (A. Mallen)

Relevant information needed to carry out an evaluation of the power shape change as a function of burnup for a heterogeneous core is being collected. This core is to be characteristic of the Conceptual Design Study (CDS) currently

being carried out by DOE. At the present time, we are awaiting DOE concurrence with regard to our request to NRC to obtain details of the core design from ANL.

Work is progressing on our evaluation of DIF-3D on the BNL computer.

Distribution

BNL RSP Associate Chairmen
BNL RSP Group Leaders
BNL SEG Personnel

J. F. Meyer (15)
T. P. Speis
U.S. NRC Division of Technical
Information and Control (2)