TITLE: TRAC HYDRODYNAMICS AND HEAT TRANSFER

AUTHOR(S): D. R. Liles and D. A. Mandell

SUBMITTED TO: Seventh Water Reactor Safety Research Meeting November 1979

> By acceptance of this article, the publisher recognizes that the U.S. Government retains a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes.

> The Los Alamos Scientific Laboratory requests that the publisher identify this article as work performed under the auspices of the Department of Energy.

los alamos scientific laboratory

of the University of California

An Affirmative Action/Equal Opportunity Employer

1604 110

TRAC HYDRODYNAMICS AND HEAT TRANSFER

D. R. Liles

HYDRODYNAMICS HEAT TRANSFER

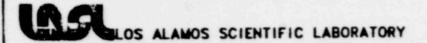
J. H. Mahaffy D. A. Mandell

T. F. Bott

W. H. Lee

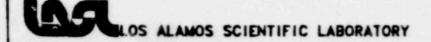
S. B. Woodruff

F. L. Addessio



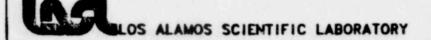
WORK COMPLETED

- A) IMPROVED THERMODYNAMICS (J.K. Meier)
- B) IMPROVED INTERFACIAL CONDENSATION MODEL
- C) PRELIMINARY TWO-FLUID (1-D) VERSION



WORK IN PROGRESS

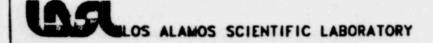
- A. FAST RUNNING VERSION
- B. NON-CONDENSABLE GAS FIELD
- C. IMPROVED CONSTITUTIVE RELATIONS



WORK IN PROGRESS

A. FAST RUNNING VERSION

- 1) IMPROVED NUMERICS
- 2) SIMPLIFIED CONSTITUTIVE RELATIONS
- 3) AVERAGED HEAT TRANSFER RODS
- 4) CHOKING MODEL



WORK IN PROGRESS

B. NON-CONDENSABLE GAS FIELD

- 1) SINGLE CONTINUITY EQUATION
- 2) GIBBS-DALTON LAW
- 3) USER SPECIFIED THERMAL AND CALORIC EQUATIONS OF STATE
- 4) SINGLE VAPOR MIXTURE TEMPERATURE AND VELOCITY (NO DIFFUSION)

