Book Review

Transient Two-Phase Flow, M. Plesset, N. Zuber, and I. Catton,
Hemisphere Publishing Corporation, New York, 1983, 736 pp., list price $75.00.

This book is an up-to-date collection of papers touching on every aspect of two-phase flow related to nuclear reactor safety. Practically all the NRC-funded programs and their overseas counterparts are represented here. In some areas the contributions are unique.

The opening section consists of several papers on experimental measurements, with emphasis on two-phase flow rate and vapor superheat when drops are present. Neither measurement is easy, and this comes through quite clearly.

A variety of separate effects experiments on reactor system components are reported, without any attempt at generalization to systems beyond reactors. Choked-flow data for flashing liquids are presented from a variety of sources.

The last half of the book skims the analytical tools that have been developed for reactor safety analysis. There is very little that one can use directly from these chapters because the treatment is, of necessity, so sketchy. One item of general interest is examples of problems solved by a variety of advanced codes developed by NRC for safety analysis. These codes could probably be used to solve a variety of other problems, too, if people knew that they existed. A great variety of transient two-phase flow problems can be studied using these tools.

This book is of limited interest to most aeronautical engineers, but is an admirable survey of the experimental and analytical tools developed to fill reactor efficency needs in the last decade.

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