Thin Safety Margin
Thin Safety Margin
The SEFOR Super-Prompt-Critical Transient Experiments
Ozark Mountains, Arkansas, 1970–71

Jerry Havens
Collis Geren

ARKANSAS SCHOLARLY EDITIONS
FAYETTEVILLE
2021
This book began as a history of the Southwest Experimental Fast Oxide Reactor (SEFOR). Our research led us to additional goals—to inform the public generally about the risks attending a national commitment to utilize fast nuclear reactors for electric power generation, and perhaps most importantly to us in the end, to consider carefully the risks of a worst-case accident that were taken during the experiments conducted in the SEFOR 20 megawatt (thermal) plutonium-fueled fast-neutron reactor during the period 1969–71 in the rural Ozark Mountains of Arkansas. The book is dedicated to:

Richard E. Webb, 1939–
and
David Okrent, 1922–2012

Whom we consider pioneers in fast-reactor safety engineering.

Drs. Webb and Okrent, practicing nuclear engineers with extensive experience in fast-reactor safety research and development, were deeply involved in the debates regarding fast-reactor safety during the period 1960–80 when major commitments to a liquid metal fast breeder reactor (LMFBR) based electric power production program were high-priority goals for the U.S. Atomic Energy Commission (AEC). We considered the AEC’s response to Webb’s and Okrent’s officially documented advice regarding the risks of accidental explosions in fast reactors that could fail the containment structures provided. It appears, as the United States considers proposals to initiate a fast-reactor-based program for electric power production as a means of dealing with the climate change threat, that there are critically important lessons here in catastrophic risk management as well as in government.