

CONTENTS / OCTOBER 1985—VOL. 71, NO. 1

A TRIBUTE TO KARL WIRTZ

- 13 Dedication / *Roy G. Post, Morton E. Wacks, Günther Kessler, Anton Bayer*
- 14 Dr. Karl E. J. Wirtz—Biographical Notes

TECHNICAL PAPERS

FISSION REACTORS

- 15 A Helium-Cooled, Poloidal Blanket with Ceramic Breeder and Beryllium Multiplier for the Next European Torus / *Mario Dalle Donne, Ulrich Fischer, Marko Kühle*
- 29 On the Development and Application of Quantitative Methods in Nuclear Reactor Regulation / *Leslie Cave, William E. Kastenber*
- 43 BACCHUS-3D/SP, A Computer Program to Describe Transient Three-Dimensional Single Phase Flow in LMFBR Rod Bundles / *Maurizio Bottoni, Burkhardt Dorr, Christoph Homann, Dankward Struwe*
- 68 Measurements and Calculations of Reactivity Effects of Material Rearrangements in a Plutonium-Fueled Fast Reactor Rod Lattice / *Friedrich Helm, Georg Henneges*
- 82 Conceptual Design of a (Pu,U)O₂ Core with a Tight Fuel Rod Lattice for an Advanced Pressurized Light Water Reactor / *Cornelis H. M. Broeders, Mario Dalle Donne*
- 96 Neutron Physics Investigations for Advanced Pressurized Water Reactors / *Cornelis H. M. Broeders*
- 111 Critical Heat Flux Correlation for Triangular Arrays of Rod Bundles with Tight Lattices, Including the Spiral Spacer Effect / *Mario Dalle Donne, Walter Hame*
- 125 A New In-Depth Training Concept for Nuclear Power Plant Operators / *Klaus Leinemann, Rainer Meyder, Horst Schnauder, Dieter Smidt*

FUSION

- 131 Analytical Correlations for Rayleigh-Taylor Instability Growth / *Helmut Jacobs*

(Continued)

ON THIS COVER

The cover of this special issue of papers dedicated to Dr. Karl Wirtz, our longtime associate editor for Europe, is a collection of photographs of the editors and staff who have worked with him these many years (see p. iv for names and titles).

CONTENTS / OCTOBER 1985—VOL. 71, NO. 1

(Continued)

NUCLEAR SAFETY

- 145 A Study of Fuel Removal via Inner Blanket Intersubassembly Gaps During the Disruption Phase of Hypothetical Loss of Flow Accidents in Heterogeneous LMFBR Cores / *Peter Royl, Barry D. Ganapol, Charles R. Bell*
- 162 An Experimental Investigation of Fuel Expansion During Core Disruptive Accidents in Liquid-Metal Fast Breeder Reactors Using Simulant Materials / *Dirk Wilhelm, Leonhard Meyer*
- 173 The Role of Vapor Bubble Dynamics During Energetic Power Excursions in Fast Reactor Core Disruptive Accidents / *Erhard A. Fischer, Werner Maschek*
- 187 In-Pile Observations of Fuel and Clad Relocation During LMFBR Core Disruptive Accidents in the STAR Experiments / *Steven A. Wright, Gustav Schumacher, Peter R. Henkel*
- 217 Assessment of the Risk Resulting from Postulated Accidents in Nuclear Power Plants: An Interim Report on Advanced Studies / *Anton Bayer*

FUEL CYCLES

- 228 The Possible Role of ^{235}U -Pu Fueled Advanced Pressurized Water Reactors / *Rakesh Chawla, Walter Seifritz*
- 236 Nuclear Energy for Coal and Steel / *Rudolf Schulten*

CHEMICAL PROCESSING

- 240 On the Dissolution of (U,Pu) O_2 Solid Solutions with Different Plutonium Contents in Boiling Nitric Acid / *Dieter Vollath, Horst Wedemeyer, Helmut Elbel, Elmar Günther*

NUCLEAR FUELS

- 246 Modeling Changes in the Fission Gas Behavior Code LAKU Based on Recent Analysis of Experiments / *L. Våth, Erhard A. Fischer*

ECONOMICS

- 258 Analysis of the Macro- and Microeconomic Aspects of Advanced Pressurized Water Reactors / *Peter Klumpp*

MATERIALS

- 272 Delay of the Attack of Liquid Steel on Niobium by a Multilayer Coating / *Volker Heinzl, Rolf Huber, I. Schub, Gustav Schumacher*
- 289 The $(n,2n)$ and $(n,3n)$ Reactions of Lead, A Potential Neutron Amplifier for Fusion Blankets / *Samuel Carmona, Shimon Yiftah*

(Continued)

CONTENTS / OCTOBER 1985—VOL. 71, NO. 1

(Continued)

RADIOISOTOPES AND ISOTOPES

- 296 A Review of Improvements of Evaluated Minor Transactinium Isotope Neutron Data, Their Qualification by Integral Experiments, and Remaining Data Requirements / *H. Küsters*

HEAT TRANSFER AND FLUID FLOW

- 314 An Efficient Method to Improve Flow Representation Across Abrupt Changes of Cross-Sectional Areas / *Philipp Schmuck*

ANALYSES

- 326 In-Pile Determination of Fuel Disruption Mechanisms Under LMFBR Loss-of-Flow Accident Conditions / *Steven A. Wright, Erhard A. Fischer, Peter K. Mast, Gustav Schumacher*
- 341 Neutron Reaction Rate Measurements as Tests of Diffusion Calculations in a Fast Breeder Blanket Facility / *Franklyn M. Clikeman, Sai-Chi Mo, Karl O. Ott, Gary Alan Harms, H. P. Chou, R. H. Johnson*

TECHNIQUES

- 353 The CABRI Fast Neutron Hodoscope / *K. Baumung, K. Böhnel, H. Bluhm*

DEPARTMENT

- 1 Authors