

CONTENTS / APRIL 1983-VOL. 61, NO. 1

TECHNICAL PAPERS

FISSION REACTORS

7 The Effect of Coolant Orificing on the Core Performance of a Heterogeneous Liquid-Metal Fast Breeder Reactor / Mamoru Konomura, Yoshiaki Oka, Shigehiro An

NUCLEAR SAFETY

- 17 An Emergency Measurement System for the Rapid Assessment of Environmental Exposure / Karl Heinemann, Ralf Hille, Kurt Jürgen Vogt
- 25 Simple Reactor Model Simulation of a LOFT ATWS Event / J. Louis Tylee
- 33 Evaluation of Volatile and Gaseous Fission Product Behavior in Water Reactor Fuel Under Normal and Severe Core Accident Conditions / Jeffrey Rest

FUEL CYCLES

49 A Modified Borresen Coarse-Mesh Computation for a Three-Dimensional Pressurized Water Reactor Benchmark Problem / Chang Hyo Kim, Samuel H. Levine

CHEMICAL PROCESSING

55 Development of a Process for the Co-Conversion of Pu-U Nitrate Mixed Solutions to Mixed-Oxide Powder Using a Microwave Heating Method / Masumichi Koizumi, Katsuyuki Ohtsuka, Hiroto Isagawa, Hideo Akiyama, Akio Todokoro

NUCLEAR FUELS

- 71 Mass Spectrometric Study of the Potential of Al₂O₃/SiO₂ Additives for the Retention of Cesium in Coated Particles / K. Hilpert, R. Odoj, H. W. Nürnberg
- 78 An Automated Procedure for Selecting Boiling Water Reactor Refueling Policies Following Operational Problems or Changes / S. H. Yeh, Alice Y. Ying, J. Weisman

(Continued)

ON THIS COVER

This month's cover is taken from a figure in the paper by G. R. Fenske et al.—still photographs from a high-speed movie of a fast direct electrical heating transient on restrained (quartz-clad) annular fuel pellets at low pressure. (Courtesy of the Material Science and Technology Division of Argonne National Laboratory.)

CONTENTS / APRIL 1983-VOL. 61, NO. 1

(Continued)

RADIOACTIVE WASTE MANAGEMENT

93 Decontamination of Radioactive Metal Surfaces by Plasma Arc Gouging / Osamu Kuriyama, Takao Koyama, Makoto Kikuchi

MATERIALS

- 100 Effect of Helium Pressure on the Response of Unirradiated UO₂ Subjected to Thermal Transients / G. R. Fenske, R. B. Poeppel, J. E. Emerson, P. M. Chapello, S. G. Das, R. H. Sevy
- 113 Temperature-Dependent Microhardness of A533-B Reactor Pressure Vessel Steels / Bryce L. Shriver, Thomas G. Hook

TECHNICAL NOTES

NUCLEAR SAFETY

118 Investigations on the Improvement of the Iodine Filtration Concept of Pressurized Water Reactors / H. Deuber. J. G. Wilhelm

FUEL CYCLES

121 A Liquid-Metal Fast Breeder Reactor Fueling Concept for Thorium Utilization and Improved Inherent Safety / Yuji Ishiguro

RADIOACTIVE WASTE MANAGEMENT

127 Method for the Sealing and Decontamination of Radioactive and Radioactively Contaminated Components and Materials / Daniel Neupert, Peter Demtröder

DEPARTMENTS

- 1 Authors
- 129 Book Reviews