

### NONCONVENTIONAL CORE DESIGNS OF LIQUID-METAL FAST BREEDER REACTORS

- 9 Preface: Nonconventional Core Designs of Liquid-Metal Fast Breeder Reactors / *Charles Till*

### TECHNICAL PAPERS

- 10 Nuclear Design and Economic Comparison of a Conventional and Bullseye Liquid-Metal Fast Breeder Reactor Core / *J. A. Vitti, L. D. Felten, N. G. Galluzzo, J. M. Otter, J. C. Brittingham*
- 21 Physics Studies of a Heterogeneous Liquid-Metal Fast Breeder Reactor / *Michael J. Lineberry, Harold F. McFarlane, Peter J. Collins, Stuart G. Carpenter*
- 44 Performance Characteristics of Homogeneous Versus Heterogeneous Liquid-Metal Fast Breeder Reactors / *W. P. Barthold, J. C. Beitel*
- 61 Physics Performances of a Heterogeneous Fast Reactor Core Concept Studied in MASURCA / *Y. H. Bouget, M. Cosimi, P. Hammer, G. Humbert, F. Lyon, M. Martini*
- 76 Nuclear Performance of Liquid-Metal Fast Breeder Reactors Designed to Preclude Energetic Hypothetical Core Disruptive Accidents / *H. S. Bailey, Y. S. Lu*

### OCCUPATIONAL RADIATION EXPOSURE AT NUCLEAR POWER PLANTS

- 83 Preface: Occupational Radiation Exposure at Nuclear Power Plants / *E. A. Warman*

### TECHNICAL PAPERS

- 84 Occupational Radiation Exposure at French Power Plants: Measurement and Prediction / *P. Beslu, G. Frejaville, P. Jeanson*
- 91 Quantifying Plant Availability, ALARA, and Occupational Radiation Exposure Relationships / *Philip M. Garrett*
- 97 Getting at the Source: Reducing Radiation Fields / *Robert A. Shaw*

(Continued)

#### ON THIS COVER

This month's cover shows an artist's conception of a design for nuclear waste management.

# CONTENTS / JUNE 1979—VOL. 44, NO. 1

(Continued)

## REACTORS

- 104 Development of a Diagnosis System for a Boiling Water Reactor / *Fumio Murata, Kanji Kato, Fumio Tomizawa, Isao Sumida*
- 118 Analysis of the Interaction of Fuel Channels with the End Shields in CANDU Reactors / *S. R. MacEwen, A. R. Causey*

## REACTOR SITING

- 132 Mitigating Community Impacts of Energy Development: Some Examples for Coal and Nuclear Generating Plants in the U.S. / *Elizabeth Peelle*

## FUEL CYCLES

- 141 Critical Experiments with Fast Test Reactor Fuel Pins in Water / *S. R. Bierman, B. M. Durst, E. D. Clayton, R. I. Scherpelz, Howard T. Kerr*

## ECONOMICS

- 152 Economic Performance of Liquid-Metal Fast Breeder Reactor and Gas-Cooled Fast Reactor Radial Blankets / *Nicholas Tsoulfanidis, M. Hossein Jankhah*

## MATERIALS

- 172 Multiaxial Creep Equations for Nonlinear and Volume-Nonconservative In-Reactors Creep / *M. M. Hall, Jr.*

## RADIOISOTOPES

- 177 Study of an Optimum Design for Subcritical Neutron Multipliers Using Californium-252 Neutron Sources / *B. Wei-Teh Lee, S. H. Levine, W. A. Jester*

## INSTRUMENTS

- 188 Application of the Self-Powered Detector Concept in the Design of a Threshold Gamma-Ray Detector / *F. E. LeVert*

## TECHNICAL NOTE

### FUEL CYCLES

- 192 Plutonium Isotopic Calculations for a Modern Light Water Reactor / *R. D. Mosteller, Warren M. Andrews, Odelli Ozer, W. J. Eich*

## DEPARTMENT

- 1 Authors