# nuclear translogue\*

# CONTENTS/ JANUARY 1975–VOL. 25, NO. 1

# **TECHNICAL PAPERS**

# REACTORS

- 7 A Mechanical Explanation to the Overpower Failures / E. Rolstad
- 13 Thermal Sleeve Failure and Repairs—Indian Point #1 Nuclear Unit (285 MW) / Arthur Flynn, William Nelson, William Warner, Donald McCormick
- 32 Radioactivity Induced in a Theta-Pinch Fusion Reactor / Donald J. Dudziak, R. A. Krakowski
- 56 An Experimental Study of Two Coupled Reactors / Gary R. Thayer, George H. Miley, Barclay G. Jones

# **REACTOR SITING**

68 Estimate of the Hazards to a Nuclear Reactor from the Random Impact of Meteorites / Kenneth A. Solomon, Robert C. Erdmann, David Okrent

## **CHEMICAL PROCESSING**

- 72 Criticality Design of a Large-Capacity Plutonium Melting Crucible / C. L. Schuske, D. Dickinson
- 83 Some Preliminary Considerations of a Molten-Salt Extraction Process to Remove Tritium from Liquid Lithium Fusion Reactor Blankets / Victor A. Maroni, Raymond D. Wolson, Gustav E. Staahl

## FUELS

- 92 Fuel Stack Dimensional Variations in Fast Reactor Pins Under Irradiation / A. Calza-Bini, G. Cosoli, G. Filacchioni, M. Lanchi, A. Nobili, E. Pesce, U. Rocca, P. L. Rotoloni
- 103 In-Pile Measurement of Fuel-Cladding Conductance for Pelleted and Vipac Zircaloy-2 Sheathed Fuel Pins / A. Calza-Bini, G. Cosoli, G. Filacchioni, M. Lanchi, A. Nobili, E. Pesce, U. Rocca, P. L. Rotoloni

#### MATERIALS

- 113 Effect of High Helium Content on Stainless-Steel Swelling / F. W. Wiffen, E. E. Bloom
- 124 Time-Dependent Solution to Interstitial Diffusion in a Temperature Gradient / Clarence E. Lee, Terry C. Wallace

#### (Continued)

ON THIS COVER This month's cover is taken from a paper by E. Rolstad of OECD Halden Reactor Project and illustrates the stress in the cladding of a fuel rod.

# CONTENTS/JANUARY 1975–VOL. 25, NO. 1

#### (Continued)

#### **INSTRUMENTS**

**138** Evaluation of Detector-Efficiency and Source-Worth Corrections for Subcritical Reactivity Measurements in a Fast Critical Assembly / R. E. Kaiser

#### **TECHNIQUES**

**150** Specific Heat Ratio of UF<sub>6</sub> Measured with a Ballistic Piston Compressor / David E. Sterrit, George T. Lalos, Richard T. Schneider

#### DEPARTMENTS

- 1 Authors
- 166 Book Reviews

## **Coming: Conversion to Metric Units**

The use of metric units in American Nuclear Society publications will be required after a transition period to 1977. A policy calling for the early adoption of metric units was approved by the ANS Board of Directors in October (and reported in Nuclear News, December, 1974, page 101). After July, 1975, metric quantities are to appear parenthetically following conventional (non-metric) quantities; and after January, 1977, metric quantities only are to be used.

Details involved in the changeover are to be worked out by the ANS Publications Committee, through a subcommittee. Chaired by Nuclear Technology Editor Roy G. Post, this group includes the editor of Nuclear Science and Engineering, Dixon Callihan; Andre Gauvenet of CEA, France; and Harold F. McDuffie of ORNL.

A basic decision on the exact units to be specified will be made soon. Strong arguments can be made for the blanket adoption of the Système International d'Unités; however, there are questions about completeness, convenience and flexibility of these units.

Advice of the ANS membership on this is sought, and the views and advice of ANS journal authors and readers also is earnestly solicited. An announcement regarding the definition of units to be used will be made early in 1975 so that the July, 1975 schedule date can be met.