Editorial Advisory Committee

MANSON BENEDICT DEAN BROWN **IACK CHERNICK** E. RICHARD COHEN E. C. CREUTZ Frank G. Dawson O. E. DWYER Paul Gast D. H. GURINSKY A. F. HENRY D. G. Hurst A. A. Johnson C. H. MILLAR L. W. Nordheim Hugh C. Paxton FRED W. THALGOTT

ANS Officers

JOHN W. LANDIS President JAMES R. LILIENTHAL Vice President/President Elect J. ERNEST WILKINS, JR. Treasurer RAYMOND D. MAXSON Assistant Treasurer OCTAVE J. DU TEMPLE **Executive Secretary**

ANS Publications Staff

NORMAN H. JACOBSON Publications Manager RUTH FARMAKES Assistant Staff Editor KATHRYN L. FROEHLICH Copy Editor SIEGFRIED H. KRAPP Production Manager LINDA A. DOLBY Production Assistant

Composition

BELJAN, ANN ARBOR, MICH.

BELJAN, ANN ARBOR, MICH.

NUCLEAR SCIENCE AND ENGINEERING is published monthly by the American Nuclear Society, Incorporated, with executive and business offices at 244 East Ogden Avenue, Hinsdale, Illinois 60521—telephone 312/325-1991. Subscription rate is \$110/4 volumes, calendar year; \$30/single volume: Volumes 43, 44, 45 and 46 will be published during 1971: single copy price is \$13 (special issues slightly higher): address subscription orders to the American Nuclear Society (back issues of Volumes 1-17 are available from Academic Press, 111 Fifth Avenue, New York, N.Y.). Second-class postage is paid at Hinsdale, Illinois and at additional mailing offices. NUCLEAR SCIENCE AND ENGINEERING is printed in Danville, Illinois. Copyright © 1971 by the American Nuclear Society, Inc. Inquiries about the distribution and delivery of NUCLEAR SCIENCE AND ENGINEERING and requests for changes of address should be directed to the publisher, the American Nuclear Society, 244 East Ogden Avenue, Hinsdale, Illinois 60521. Allow 6 weeks for a change to become effective.

NUCLEAR SCIENCE and ENGINEERING

VOL. 45 NO. 3 SEPTEMBER 1971

Contents

TECHNICAL PAPERS

Integral Transport Theory Analysis of Central Reactivity Worth Measurements	
P. E. McGrath and W. K. Foell	237
The Effectiveness of Acceleration Techniques for	
Iterative Methods in Transport Theory	045
W. H. Reed	245 255
Remedies for Ray Effects K. D. Lathrop Group Transfer Matrices and Their Relation to	200
Basic Cross Section Data	269
Cross Sections in the Unresolved Resonance	200
Region: Methods and Evaluation of Approxi-	
mations T. F. Heenan and C. R. Adkins	279
Neutron Inelastic Scattering Cross Sections for	
Iron, Nickel, Niobium, and Tantalum from	
Threshold to 1.8 MeV V. C. Rogers,	
L. E. Beghian, and F. M. Clikeman	297
Thermal-Neutron Diffusion Parameters in Water	
by the Poisoning Method	
E. Martinho and M. M. Costa Paiva	308
Neutronic-Acoustic Detection of the Onset of Bulk	
Boiling in Liquid Sodium	
J. A. Bonnet, Jr. and R. K. Osborn	314
Evaluation of Grain Shielding Factors for Coated	
Fuel Particles	321
TECHNICAL NOTES	
Matrix Reimann-Hilbert Problems Related to	
Neutron-Transport Theory E. E. Burniston,	
C. E. Siewert, P. Silvennoinen, and P. F. Zweifel	331
The Effect of Condensing the Spatial Mesh on the	
Accuracy of Fast Breeder Fuel-Cycle Analyses.	000
Raymond E. Alcouffe and Thomas J. Hirons	333
Kinetic Distortion in a TRIGA Reactor with an Asymmetric Reflector	
Medhat M. El-Zeftawy and Lawrence Ruby	335
CORRIGENDUM	342
VOLUME 45 AUTHOR and SUBJECT INDEXES	343

Indexed in "Engineering Index" and Abstracted in "Nuclear Science Abstracts"