

A JOURNAL OF APPLIED NUCLEAR SCIENCES, NUCLEAR ENGINEERING, AND RELATED TECHNOLOGY



CONTENTS

VOLUME 5 NO. 6 DECEMBER 1968/PAGES 373-480

NUCLEAR APPLICATIONS STAFF

LOUIS G. STANG, JR., Editor
JULES B. GODEL Assistant Editor
DORIAN STANG Editorial Assistant

ANS STAFF

Technical Publications and Production

JOHN GRAHAM Senior Staff Editor RUTH FARMAKES Assistant Staff Editor DENNIS BRUMMELL Production Editor JEAN BARR Production Assistant JUNE JOHNSON Art Editor DIANNE DORAN Copy Editor

Advortisino

RICHARD HARRIS Advertising Sales Manager ROSEMARY HARVEY Circulation Manager

EDITORIAL ADVISORY BOARD

E. ALFRED BURRILL—S. H. BUSH
A. B. CHILTON—ERIC T. CLARKE
VAUGHN CULLER—W. KENNETH DAVIS
M. C. EDLUND—W. H. ESSELMAN
PAUL R. FIELDS—JOHN H. FRYE, JR.
DAVID B. HALL—JOSEPH M. HENDRIE
STEPHEN LAWROSKI—FORREST J. REMICK
S. SANDHAUS—MORTIMER A. SCHULTZ
EDWIN L. ZEBROSKI

ANS OFFICERS

KARL P. COHEN President LOUIS H. RODDIS, JR. Vice President JAMES R. LILIENTHAL Treasurer OCTAVE J. DU TEMPLE Executive Secretary

COMPOSITION

BELJAN, ANN ARBOR, MICHIGAN

Address all manuscript and editorial communications to the editorial offices. Nuclear Applications, 60 Rutherford Drive, Upton, New York

Nuclear Applications is published monthly by the American Nuclear Society, Incorporated, with executive and business offices at 244 East Ogden Avenue, Hinsdole, Illinois 60521, telephone 312 / 325-1991. Subscription rate is \$25/volume, two volumes published per year. It is printed in Danville, Illinois, and second-class postage is paid at Hinsdole, Illinois, and at additional mailing offices. Copyright © 1968 by the American Nuclear Society, Incorporated.

Statements made by authors of contributions to the various departments or of technical papers and notes do not necessarily reflect the viewpoint of the American Nuclear Society nor should their appearance herein be construed as tacit approval or endorsement by the Society. Abstracts appearing in Nuclear Applications may be freely republished anywhere at any time.

TECHNICAL PAPERS AND NOTES

2	Possibilities and Advantages of Using Negative Pions in Radiotherapy / Louis Rosen	379
A	Notch Ductility Properties of SM-1A Reactor Pressure Vessel Following the In-Place Annealing Operation / Uldis Potapovs, J. Russell Hawthorne, Charles Z. Serpan, Jr	389
	A Correction Factor for In-Reactor Sintering of Fast Oxide Fuels / E. G. Stevens	410
	A Jaw Crusher for Plutonium Ceramics / J. E. Ayer, H. Osuna	417
À	A Nuclear Thermionic Space Power Concept Using Rod Control and Heat Pipes / John L. Anderson, Edward Lantz	424
	Method for Estimating Critical Velocity for Damage to Reentering Fuels Impacting End On / Calvin C. Silverstein	437
uthn/m	Neutron Diffusion Parameters of Perfluorodimethyl-cyclohexane Using A Two-Region Pulsed-Neutron Technique / C. A. Bisselle, John A. Wethington, Jr	445
	Gamma Heating in Thin Heavy-Element Absorbers / John H. Lynch, Richard J. Crum, Harry J. Reilly	456
	Calculation of Concentration Behavior During Chemical Decontamination of a Nuclear Reactor Plant / S. K. Beal, D. R. Henderson	464

DEPARTMENTS

COMMENTA	ARY -		-	_	-	-	-	-	-	-		-	-	-	-	374
AUTHORS A	AND PA	APER	S -	-	-	-	-	-	-	-	-	-	-	-	-	376
CORRIGENI	DA -		-	-	-	-	-	-	-	-	~	-	-	-	-	378
BOOK REV	IEWS		-	-	-	-	-	-	-	-	~	-	-	-	_	468
VOLUME 5	INDEX	ŒS -	-		-	-	-	-	-	-	~	-	-	-	-	470
VOLUME 5	CONT	ENTS	-	-	-	-	-	-	_	-	-	-	-	-	-	iii