



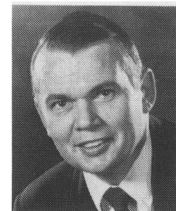
AUTHORS — FEBRUARY 1974

REACTORS

AN OPTIMAL NUCLEAR FUEL MANAGEMENT MODEL FOR FAST REACTORS

*H. G. Stoll
R. A. Axford*

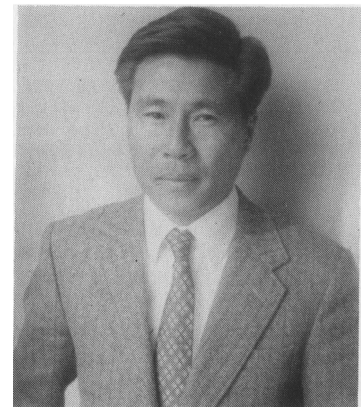
Harry G. Stoll (left) (PhD, University of Illinois, 1972) is currently an application engineer in the Electric Utility Engineering Operation of the General Electric Company. His interests include utility nuclear planning, nuclear fuel management modeling, utility system simulation, and application of optimization methods to nuclear system planning. Roy A. Axford (ScD, Massachusetts Institute of Technology, 1958) is professor of nuclear engineering at the University of Illinois at Urbana-Champaign. His fields of active research include reactor physics and thermal analysis, optimal synthesis in reactor design, optimal nuclear fuel management, hydrodynamic stability, and physical applications of Lie groups.



TWO INTERESTING PHENOMENA OBSERVED IN THE AXIAL POWER DISTRIBUTION OF A BWR

T. Shimooke

T. Shimooke (MSc, Kyoto University, 1959; now submitting PhD thesis to the same university) is presently a member of the technical staff of Japan Atomic Energy Research Institute, Office of Power Reactor Projects. His present interests are safety engineering and evaluation of LWRs. He recently returned from a four-year assignment as a senior physicist (from 1970 to 1973) at Japan Nuclear Ship Development Agency.



RADIOACTIVE WASTE

DEEP SELF-BURIAL OF RADIOACTIVE WASTES BY ROCK-MELTING CAPSULES

Stanley E. Logan

Stanley E. Logan (BS, mechanical engineering, University of Illinois, 1949; MS, nuclear engineering, University of New Mexico, 1964) is on leave of absence from Sandia Laboratories in Albuquerque, completing a PhD in nuclear engineering at the University of New Mexico. His previous work includes rocket combustion research, liquid sodium coolant systems, and the nuclear rocket program. He is currently interested in environmental assessment of energy systems.



A METHOD FOR DETECTING FUEL CLADDING PENETRATION IN LMFBRs BY MONITORING THE SODIUM COOLANT FOR IODINE-135

N. R. Chellew (top left) (BS, University of Minnesota), W. E. Miller (top right) (BS, Illinois Institute of Technology), R. W. Kessie (center left) (MS, Illinois Institute of Technology), C. C. McPheeters (bottom right) (MS, University of New Mexico), and P. A. Nelson (bottom left) (PhD, Northwestern University) were staff members of the Sodium Technology Engineering Section at Argonne National Laboratory when this work was performed. Each has had at least ten years of experience in programs associated with the development of LMFBRs. N. R. Chellew, W. E. Miller, and C. C. McPheeters are currently involved in work associated with studies of fuel elements which will be subjected to destructive transient irradiation. R. W. Kessie is presently working on special experiment-to-computer interfacing for the control of experiments and the collection of data generated, and P. A. Nelson is head of a section which is studying lithium-sulfur batteries for electric automobile and off-peak-energy storage application.

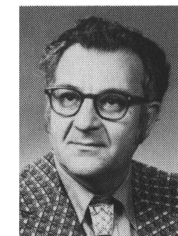
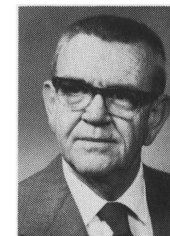
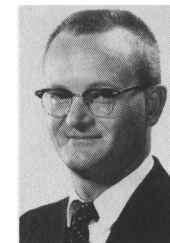
*N. R. Chellew
W. E. Miller
R. W. Kessie
C. C. McPheeters
P. A. Nelson*



MEASUREMENTS OF UF₆ CYLINDERS WITH PORTABLE INSTRUMENTS

R. B. Walton (top left) (PhD, physics, University of Wisconsin), T. D. Reilly (top right) (PhD, physics, Case Western Reserve University), J. L. Parker (center left) (PhD, physics, University of Utah), and J. H. Menzel (center right) (PhD, nuclear engineering, Rensselaer Polytechnic Institute) are staff members of the Los Alamos Scientific Laboratory, working in the Nuclear Analysis Research Group to develop techniques for nondestructive assay of fissionable materials. E. D. Marshall (bottom left) (BS, chemistry, St. Mary's Collage) is chief of the Nuclear Materials Control Branch, U.S. Atomic Energy Commission, Oak Ridge Operations Office (ORO). He evaluates the effectiveness of accountability and safeguards programs at all ORO contractor facilities. L. W. Fields (bottom right) (BS, industrial engineering, University of Tennessee) is a member of the Nuclear Materials Control Branch, U.S. Atomic Energy Commission, Oak Ridge Operations Office. His responsibilities include independent verification of fissionable materials inventories.

*R. B. Walton
T. D. Reilly
J. L. Parker
J. H. Menzel
E. D. Marshall
L. W. Fields*



DETECTION OF DEFECTIVE SiC LAYERS IN COATED NUCLEAR FUEL PARTICLES

Dudley M. Hewette II (not pictured) (BS, metallurgical engineering, The University of Tennessee, 1959) is an associate metallurgist in the Metals and Ceramics Division of the Oak Ridge National Laboratory with thirteen years of engineering experience. His recent interests are fuels for high-temperature gas-cooled reactors, specifically chemical vapor deposition of pyrolytic carbon on fuel particles in fluidized-bed systems and irradiation damage to pyrolytic carbons, carbon-coated fuel particles, and coated-particle fuel compacts. William R. Laing (MS, Emory University, 1951) is a laboratory department head in the Analytical Chemistry Division of Oak Ridge National Laboratory. His present interests are the analytical chemistry of nuclear fuels, environmental analyses, and coal liquefaction.

D. M. Hewette, II
W. R. Laing

