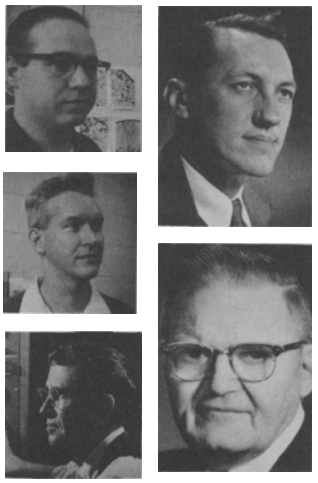
AUTHORS AND PAPERS

The highly condensed summaries of papers and technical notes (below) are intended to assist the busy reader in determining the order in which to read the technical material. Biographical comments are for human interest.



IRRADIATED METAL PINS IN TREAT

Fermi-A- and EBR-II-type fuel pins were subjected to transient heating in the TREAT reactor under conditions leading to complete meltdown. Irradiation-induced changes capable of affecting the course of the meltdown were found.

C. August, C. E. Dickerman, and L. E. Robinson (left, top to bottom) are members of the Argonne National Laboratory Reactor Physics Division. For the past few years, they have specialized in fast-reactor safety studies. E. S. Sowa (upper right) is a member of the ANL Reactor Engineering Division. J. H. Monaweck (lower right) was Assistant Director of the ANL Reactor Engineering Division prior to his recent retirement.

UNDERGROUND GASEOUS WASTE DISPOSAL

This timely proposal to prevent a potentially serious problem by storing radioactive gases underground is sure to generate considerable interest and a lively discussion.

P. C. Reist is Assistant Professor of Environmental Health Engineering at the Harvard School of Public Health. Prior to this position, he acquired five years' experience with the US Public Health Service and an Ms and ScD from MIT and Harvard, respectively.

CRITICALITY OF PLUTONIUM COMPOUNDS

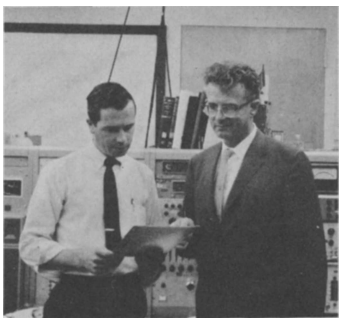
Guidelines for nuclear criticality safety are provided by a survey utilizing transport theory calculations made to determine critical masses of bare and water-reflected spheres as a function of density and H:Pu ratio for 12 Pu compounds in the undermoderated range.

Leo E. Hansen (right), a Research Engineer at the Plutonium Critical Mass Laboratory of Battelle's Pacific Northwest Laboratory, has been a key contributor to criticality studies on plutonium and uranium and to the development of nuclear criticality knowledge and control. E. Duane Clayton, Manager of the PNL Critical Mass Physics Section and Associate Professor in the University of Washington's Department of Nuclear Engineering, is responsible for Hanford critical-mass studies with Pu and for coordinating research at the Critical Mass Laboratory at the University.

CREEP OF PYROLYTIC-CARBON COATINGS

The Prados-Scott model for coated-particle behavior described in an article in *Nucl. Appl.* **2**, 402 (Oct. 1966) has been modified to include the effects of irradiation-induced creep on the stress-strain history of pyrolytic-carbon coatings. It now shows that such creep effects may overwhelm many other factors related to fuel life for uses now being considered.

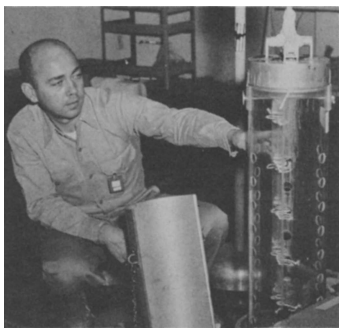
J. W. Prados (left) is Professor of Chemical Engineering at the University of Tennessee and a specialist in the mathematical simulation of chemical-process and nuclear-fuel systems. J. L. Scott is head of the Ceramics Laboratory at ORNL. Both obtained PhD's at the University of Tennessee in 1957 and since then have collaborated on studying fuel-irradiation behavior.



CESIUM DEPOSITION ON STAINLESS STEEL

As a means of assessing the problem of long-lived volatile fission products escaping from a high-temperature gas-cooled reactor, the deposition of cesium tagged with ^{137}Cs onto stainless steel was measured and found to be directly related to the temperature and duration of the preparatory bakeout period.

Lloyd R. Zumwalt (right), Professor of Nuclear Engineering at North Carolina State University, was, until recently, in charge of reactor chemistry studies at General Atomic, having been associated with nuclear technology since the Manhattan Project. Clyde E. Milstead, with the GA reactor chemistry group for seven years, specializes in studies of the interaction of cesium with graphite and steel.



LITHIUM-FLUORIDE RESPONSE TO NEUTRONS

Lithium-fluoride thermoluminescent detectors, both normal and depleted of ^{6}Li, are shown to be useful for determining gamma-ray doses and thermal-neutron doses in a reactor.

Robert E. Simpson is Head of the Radioactivity Section of the US Food and Drug Administration's Division of Food Chemistry. He has been active in applied research on radiation dosimetry at high-intensity gamma and nuclear reactor irradiation facilities at Cook Electric, Lockheed, USNRDL, and the Walter Reed Reactor.

CONVERSION RATIO BY SAMPLING SPENT FUEL

Sampling 0.0042% of a spent reactor core at the proper points, coupled with appropriate analytical treatment of the data, can be used to determine core burnup, isotopic inventory, and conversion ratio. The discussion of nine different definitions of conversion ratio will provoke comment but should eliminate previous vagueness and promote general agreement.

Jacek Jedruch (PhD, Senior Scientist) and Richard J. Nodvik (BS, Engineer) are with the Advanced Reactors and Pressurized Water Reactor Divisions (Westinghouse), respectively. In 1964-65 they cooperated in the physics evaluation of the spent cores of the Yankee reactor. Currently, Jedruch (left) is concerned with development of analytical methods and design of fast reactors and Nodvik with the operational followup of the Yankee and Indian Point reactors.