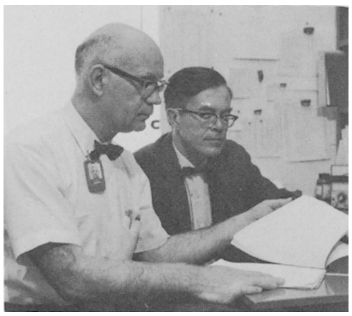
AUTHORS AND PAPERS

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.



PLUTONIUM HEXAFLUORIDE RECOVERY

Lithium fluoride as a substrate in a sorption-desorption system effectively separates plutonium hexafluoride from uranium hexafluoride, leaving no detectable traces of the latter.

Sidney Katz (left) (PhD, Michigan State University, 1949) specializes in uranium chemistry and in complex formation connected with volatility processing. George I. Cathers (PhD, Yale University, 1948) has been engaged since 1955 in the development of fluoride volatility processes for reactor fuel. Both are members of the Oak Ridge National Laboratory staff.

FLUIDIZED-BED FLUORIDE VOLATILITY

Uranium and plutonium were removed efficiently from irradiated UO_2 fuel processed in a fluidized bed by oxidizing with O_2, fluorinating with BrF_5 to convert uranium to volatile UF_6, then fluorinating with F_2 to convert the plutonium to PuF_6.

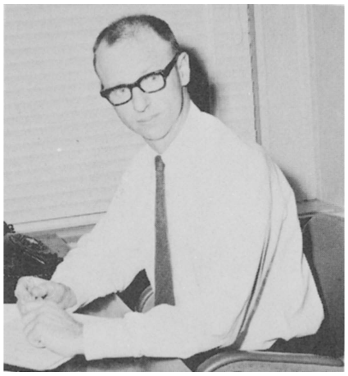
A. A. Chilenskas has developed aqueous, pyrochemical, and fluroide volatility fuel processes at Argonne National Laboratory for 14 years. His present interests include studies of fission product distribution and actinide element decontamination for various volatility processing schemes.

SUPPRESSION OF RADIOIODINE RELEASES

The amount of ^{131}I released to the atmosphere from the processing of uranium fuels is reduced 55-fold by adding mercury to the dissolver solution. The mercury-iodine complex is retained in solution until removed by scrubbers.

Stewart R. Smith (BS, chemistry, Case Institute of Technology) is a chemist in the Radiological Sciences Division at the Savannah River Laboratory where, for five years, he has studied the behavior of radioiodine in separation processes.

CALIFORNIUM-252 NEUTRON SOURCE



Californium-252 has unique advantages over many radioisotopes and accelerators for specific applications where a continuous intense ($>10^9$ n/sec) source of neutrons is useful.

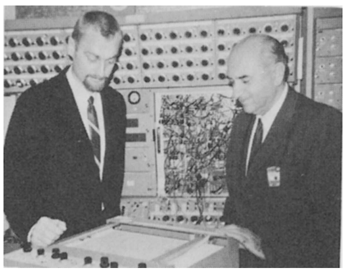
W. C. Reinig (BME, Polytechnic Institute of Brooklyn, 1945) *is a senior research supervisor in the Radiological Sciences Division at Savannah River Laboratory. Before joining du Pont in 1951, he worked at Hanford and Brookhaven.*

HAFNIUM CONTROL RODS

Hafnium control rods irradiated in the Shippingport PWR to a neutron fluence of 6×10^{21} n/cm^2 (>1 MeV) were destructively tested for blackness, corrosion, and mechanical properties. Results clearly indicate the adequacy of Hf as a control material.

G. J. Salvaggio (PhD, University of Pittsburgh) is an advisory engineer at Westinghouse Bettis Atomic Power Laboratory where he has studied the irradiation effects and mechanical properties of Zircaloy and hafnium . He is the editor of the chapter on hafnium in the new USAEC Reactor Handbook.

NUCLEAR ROCKET ENGINE STABILITY



Analytical methods have been applied to verify the stability of a nuclear rocket engine for various propellant temperature and flow conditions. This stability makes indirect control possible.

Donald M. Wiberg (left), Assistant Professor of Engineering at the University of California, Los Angeles, is also a consultant to McDonnell Douglas Corporation. His PhD in engineering is from Caltech. Jan S. Woyski, a senior scientist at McDonnell Douglas, has been active in the fields of nuclear engine dynamics and coupling effects in rocket clusters. His electrical Dipl. Ing. is from Warsaw Polytechnic and École Supérieure d'Électricité in Paris, and his MS (nuclear engineering) from the University of California.