



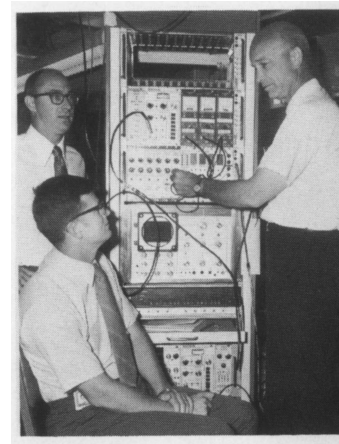
AUTHORS — JANUARY 1972

REACTORS

POST-SHUTDOWN SURGES IN COVER GAS ACTIVITY IN EXPERIMENTAL BREEDER REACTOR II (EBR-II)

R. M. Fryer (left) (BS, Oregon State; MS, University of Idaho) spent eight years on closed cycle, remote pyrochemical fuel processing at the EBR-II Fuel Cycle Facility before shifting to the study of fuel cladding defects. This has included analysis of leaking fuel signals in EBR-II as well as specific fuel failure experiments carried out in the TREAT reactor. R. V. Strain (center) (BS, Colorado School of Mines; MS, Iowa State University) has worked since 1966 in the Fuel Cycle Facility at EBR-II. At present his work is principally the examination of fuels and structural materials irradiated in EBR-II. G. S. Brunson (right) (BS, USMA; MS, Princeton University) came into the nuclear business through the military weapons program. He has been in reactor physics with Argonne National Laboratory in Idaho since 1954 with the exception of a year in Lisbon (as an IAEA technical assistance expert) and two years in Vienna at IAEA Headquarters.

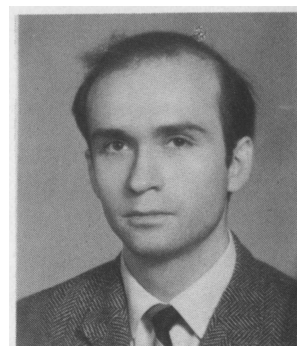
*G. S. Brunson
R. M. Fryer
R. V. Strain*



LINEAR EXTRAPOLATION DISTANCES FOR CENTRALLY AND ECCENTRICALLY LOCATED CONTROL RODS

Fahir Borak (PhD, nuclear engineering, New York University) is acting group leader in the Project and Planning Group, Nuclear Engineering Division at Çekmece Nuclear Research and Training Center, Istanbul.

Fahir Borak



FUELS

APPLICATION OF NITRIDE-FORMING REACTIONS TO REPROCESSING OF SPENT NUCLEAR FUELS

R. N. Anderson (right) (PhD, mineral engineering, Stanford University, 1969) is research associate in the Department of Mineral Engineering at Stanford where his principal work is in the thermochemistry of metals. N. A. D. Parlee (left) (PhD, chemistry, McGill University) is professor of extractive metallurgy at Stanford University. His primary research interests are in gas-liquid-metal reactions. J. M. Gallagher (center) (MS, mechanical engineering, Stanford University) is a third year AEC Fellow in nuclear engineering and is a candidate for his PhD degree in that department. He is working concurrently for his MS degree in engineering economic systems.

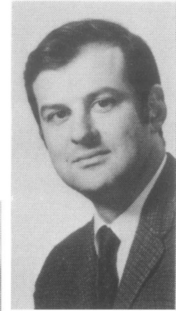
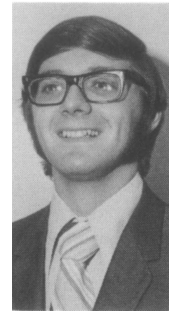
*R. N. Anderson
N. A. D. Parlee
J. M. Gallagher*



INTERCHANNEL MIXING IN WIRE WRAPPED LIQUID METAL FAST REACTOR FUEL ASSEMBLIES

*Neil E. Todreas
James A. Turi*

Neil E. Todreas (top) (DSc, nuclear engineering, Massachusetts Institute of Technology) is an associate professor of nuclear engineering at MIT. His interests are in reactor thermal analysis and engineering aspects of reactor safety. Prior to returning to MIT in 1970, Todreas was with the USAEC Division of Reactor Development and Technology working on fast reactor core design. James A. Turi (MS, nuclear engineering, Massachusetts Institute of Technology) is currently with the Office of Nuclear Safety. His interests are in thermal and fast reactor safety. He joined the USAEC, Division of Reactor Development and Technology, in 1968, where he worked in the Office of Reactor Engineering, Core Design Branch.



ECONOMICS

ECONOMIC ANALYSIS OF THE NUCLEAR FUEL CYCLE

*Larry M. Girvin
Warren F. Witzig*

Larry M. Girvin (top) (MS, nuclear engineering, The Pennsylvania State University, 1971) is currently involved in nuclear fuel quality assurance and economics with Virginia Electric and Power Company. His previous experience was with the United States Air Force as a nuclear and conventional weapons systems officer. Warren F. Witzig (PhD, physics, University of Pittsburgh, 1952) is professor and head of the Department of Nuclear Engineering at The Pennsylvania State University. His interests are in fuel cycles, reactor safety, plant siting, and licensing. He was previously associated with the NUS Corporation, Westinghouse and, during World War II, the Manhattan District.

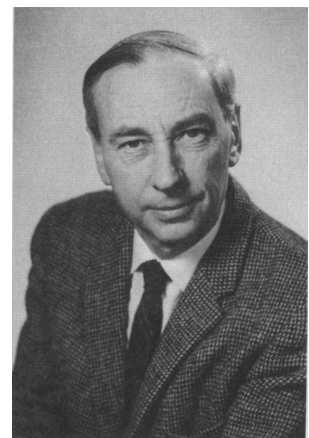


MATERIALS

INVESTIGATION OF FLUORINE DEPOSITS ON ZIRCALOY SURFACES BY PROTON ACTIVATION

W. D. Mackintosh

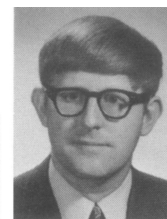
William D. Mackintosh (BSc, University of Glasgow) has been engaged in isotope production, neutron activation analysis, and reactor chemistry. His present interest is the exploitation of accelerators for analytical purposes.



ECONOMICS OF RADIATION VERSUS HEAT-CATALYST CURING FOR WOOD-PLASTIC FLOORING PLANT

George B. Taylor (top) (BS, chemical engineering, MS, nuclear engineering, West Virginia University) was formerly assistant vice president of Radiation Machinery Corporation and has been active in the development of radiation processes for many years. He is currently president of George B. Taylor Ltd. Robert M. Duff (center) has been active in nuclear engineering chemical process research and development for many years and is currently production manager for Radiation International, Inc., Nuclear Division. George R. Dietz (bottom) (MS, nuclear science, Georgia Institute of Technology) is manager, Radiation Services, Radiation International, Inc., Nuclear Division. His activities have centered about isotope irradiators and radiation applications.

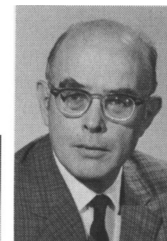
G. B. Taylor
G. R. Dietz
R. M. Duff



PRODUCTION OF PLUTONIUM-238 WITH MINIMUM PLUTONIUM-236 CONTAMINATION

W. J. Lindsey (top) (MS, Massachusetts Institute of Technology, 1936) is currently chief, Production Reactors Branch, Division of Production, USAEC. He is responsible for program direction of AEC production reactors, fuel preparation, and related process development work at the Savannah River and Richland plants. W. Kelly Woods (center) (DSc, chemical engineering, Massachusetts Institute of Technology) is currently a staff consultant for the Washington Public Power Supply System and is concerned with environmental aspects of the 1100-MW Hanford No. 2 nuclear power reactor. P. L. Roggenkamp (bottom) (PhD, Indiana University, 1953) is currently research manager, Theoretical Physics Division at the Savannah River Laboratory of the Du Pont Company, involved in reactor physics development and the design and operations of cores for the Savannah River production reactors.

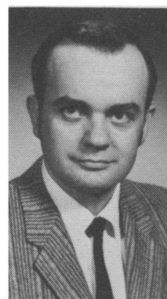
W. J. Lindsey
P. L. Roggenkamp
W. K. Woods



IN-PHANTOM DOSIMETRY OF PLUTONIUM-238 CIRCULATORY SUPPORT HEAT SOURCES

J. C. Sheppard (left) (PhD, Washington University, St. Louis, 1955) worked for General Electric Company, at Hanford from 1955 to 1957. He taught chemistry at San Diego State College from 1957 to 1961. Since 1961 he has performed research in various fields of nuclear technology at Hanford, most recently with Battelle-Northwest. Frederick T. Cross (PhD, University of Rochester, 1967) is a senior research scientist at Battelle-Northwest and is currently serving on an *ad hoc* USAEC committee on the Hazards of Californium-252, and on NCRP Scientific Committee 33 on Radiation Dose Calculations.

F. T. Cross
J. C. Sheppard

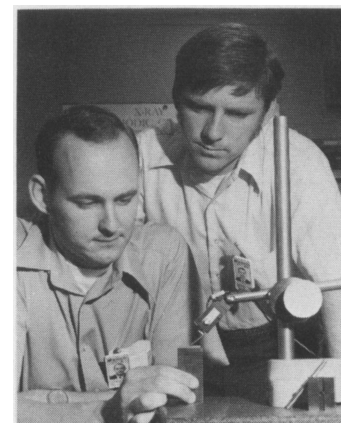


EXTENSION OF THE DUAL SPECTRUM FUEL ASSAY CONCEPT*C. N. Kelber*

Charles N. Kelber (PhD, physics, University of Minnesota, 1951) joined Argonne National Laboratory in 1955. He has been active in research and test reactor development (ARGONAUT, Mighty Mouse, AHFR, AARR), reactor theory and calculational methods, and reactor safety. His current interests include applications of Monte Carlo analysis and reactor fuel safeguards.

**THERMAL DENSIFICATION OF AUSTENITIC STAINLESS STEEL***J. L. Straalsund
M. M. Paxton*

Jerry Straalsund (right) (PhD, engineering science, Washington State University) is a senior research scientist in the Reactor Metals Subdepartment at WADCO Corporation. His principal area of research is irradiation-induced swelling of reactor structural materials. Mike Paxton (MS, metallurgy, University of Washington, 1967) is a research engineer at WADCO Corporation. His principal area of responsibility is cladding and fuel duct characterization for the Fast Flux Test Facility.

**NEUTRON ACTIVATION ANALYSIS USING DAUGHTER ACTIVITY***B. W. Wilkinson
J. Toth-Allen*

B. W. Wilkinson (top) (PhD, chemical engineering, The Ohio State University) is associate professor of chemical engineering and is nuclear reactor supervisor at Michigan State University. He has had experience in the fields of radiation chemistry, nuclear fuels, and radioisotope applications both at The Dow Chemical Company and at MSU. J. Toth-Allen (PhD, Michigan State University, 1970), a biophysicist, is temporarily not actively involved in scientific research. Her interests are basically in medical research and studies concerning the basic functioning of the sensory systems. The work reported here was accomplished as part of her doctoral research, which concerned the fate and pathology of the platinum compound in relation to effective cancer treatment with the compound.

