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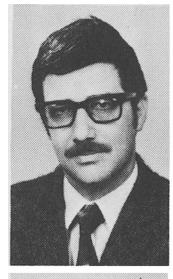
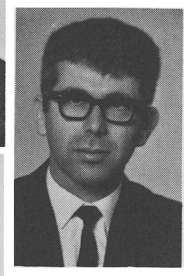
AUTHORS — NOVEMBER 1974

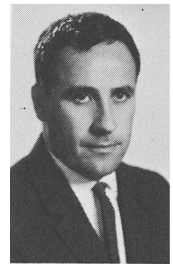
REACTORS

SENSITIVITY OF FAST REACTOR STATIC AND DYNAMIC PARAMETERS TO DIFFERENT FISSION-PRODUCT CROSS-SECTION DATA

D. Ilberg
D. Saphier
S. Yiftah



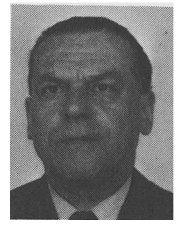


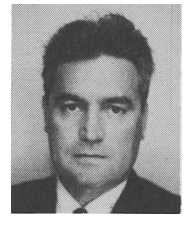


D. Ilbert (top) (MSc, nuclear engineering, Technion, Israel Institute of Technology, 1967), presently in final stages of his DSc Thesis, is active in fast reactor safety research and reactor behavior under high burnup conditions. D. Saphier (center) (DSc, reactor physics, Technion, Israel Institute of Technology, 1970), is head of the Fast Reactor Physics Division, Soreq Nuclear Research Center, where he is involved in fast reactor research, mainly reactor dynamics and power plant simulation. S. Yiftah (bottom), the president of the Israel Nuclear Society, is head of the Department of Theoretical Physics and Applied Mathematics, Soreq Nuclear Research Center, and professor of nuclear engineering at the Technion. He has been doing research on fast reactor physics since 1959, following a stay of two years at Argonne National Laboratory.

THEORETICAL AND EXPERIMENTAL STUDY OF PHENIX STEAM GENERATOR PROTOTYPE MODULES

L. Duchatelle
L. de Nucheze
M. G. Robin

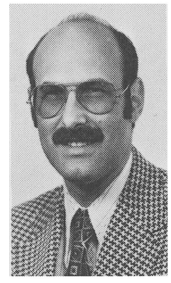


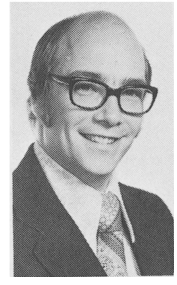


L. Duchatelle (top) (engineer CNAM Paris, thermal engineering, Bachelor of Economic Sciences) has been with CEA since 1960. He was first involved in basic experimental research on liquid-metal heat transfer coefficients. For about seven years he has been performing tests of sodium-heated steam generators and is contributing to the calculation models. L. de Nucheze (center) (engineer CNAM Paris, nuclear engineering) has been with CEA since 1959. Currently employed as a computer analyst, he was first involved in calculation in the field of fast experimental experiments, and for about nine years has developed various computer codes for sodium heat exchangers and sodium-heated steam generators, especially for the treatment of experimental data. M. G. Robin (bottom) (head, Steam Generator Development Section) has been with CEA since 1953. He has been involved in sodium research since its beginning in France. He participated actively in the preliminary design of the heat transfer loops of Rapsodie and Phenix in 1960 and was assigned to APDA for a year and worked on the Fermi Project. He is now in charge of the development of sodium-heated steam generator for CEA and is responsible for preliminary studies of the secondary sodium system of Super Phenix.

SCALING CONSIDERATIONS OF EXPERIMENTAL POST-LOCA STEAM RELIEF

J. R. Brodrick
P. A. Lowe
W. E. Burchill

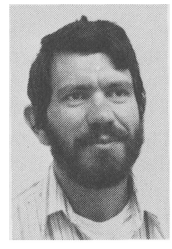


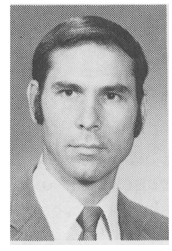


James R. Brodrick (top) (MS, nuclear engineering, Pennsylvania State University), a development engineer in the Nuclear Laboratories of Combustion Engineering, Inc., is responsible for conducting thermal hydraulic experiments related to the development of safety systems for nuclear reactors. Phillip A. Lowe (center) (BS, University of Utah; PhD, mechanical engineering, Carnegie-Mellon University) is the branch manager for steam generator development, Breeder Reactor Demonstration Project, U.S. Atomic Energy Commission (AEC). He was formerly the supervisor for thermohydraulic development and then manager of experimentation for product engineering and development at Combustion Engineering, Inc. (CE). William E. Burchill (bottom) (BS, University of Missouri; PhD, nuclear engineering, University of Illinois) is supervisor, small break analysis, Combustion Engineering, Inc. He is responsible for the development and application of methods for analysis of small break loss-of-coolant accidents. Earlier, he was principal investigator of the CE/AEC Steam-Water Mixing Program.

GAS TAG IDENTIFICATION OF FAILED FUEL—I. SYNERGISTIC USE OF INERT GASES

N. J. McCormick
R. E. Schenter

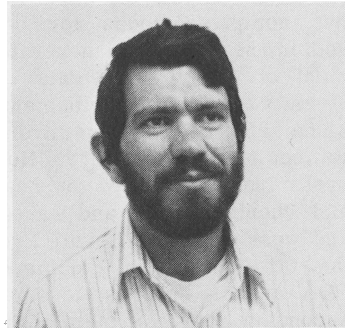




N. J. McCormick (left) (PhD, nuclear engineering, University of Michigan, 1965) is an associate professor at the University of Washington's Department of Nuclear Engineering. He has worked several years in the area of transport theory, part of the time while in Yugoslavia, and has spent three summers at the Hanford Laboratories. More recently he has been engaged in the development of methods for identification of failed fuel assemblies in fast reactors. R. E. Schenter (PhD, physics, University of Colorado, 1963) is a fellow scientist at the Hanford Engineering Development Laboratory. His primary area of experience is in the theoretical calculations of neutron reaction cross sections. He is presently chairman of the fission product subcommittee of the "Cross Section Evaluation Working Group" and chairman of the U.S. Atomic Energy Commission task force on nuclear data for fission product decay heat and burnup calculations.

GAS TAG IDENTIFICATION OF FAILED FUEL—II. RESOLUTION BETWEEN SINGLE AND MULTIPLE FAILURES

N. J. McCormick



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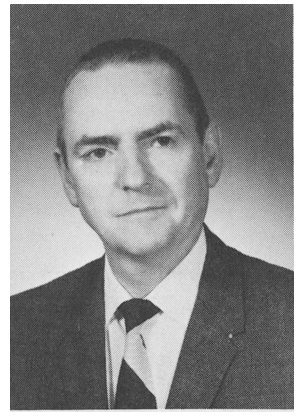
ORRIBLE—A COMPUTER PROGRAM FOR FLOW AND TEMPERATURE DISTRIBUTION IN 19-ROD LMFBR FUEL SUBASSEMBLIES

J. L. Wantland



J. L. Wantland (PhD, mechanical engineering, University of Tennessee, 1969) has been at the Oak Ridge National Laboratory since 1955 where he has done extensive experimental and analytical work in transport phenomena applied to diverse reactor systems. His present interests include LMFBR core heat transfer and fluid dynamics.

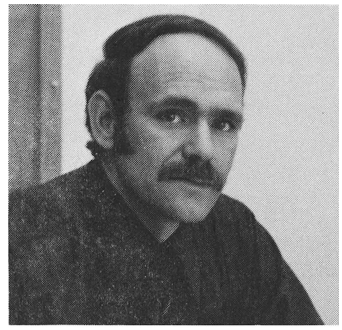
TEMPERATURE DISTRIBUTION IN THE DUCT WALL AND AT THE EXIT OF A 19-ROD SIMULATED LMFBR FUEL ASSEMBLY (FFM BUNDLE 2A)

M. H. Fontana
R. E. MacPherson
P. A. Gnadt
L. F. Parsly
J. L. Wantland

M. H. Fontana (top center) (PhD, mechanical engineering, Purdue University, 1968) is manager of the LMFBR Safety and Core Systems Programs at Oak Ridge National Laboratory (ORNL). Prior to that he was assistant director of nuclear safety programs. He has been at ORNL since 1957 and has been involved with safety, fission product release and transport, fluid flow, and heat transfer aspect of the Aircraft Reactor Test, the Experimental Gas Cooled Reactor, LWRs, and LMFBRs. R. E. MacPherson (bottom left) (BS, chemistry, Allegheny College, 1943; BS, chemical engineering, University of Pittsburgh, 1948; ORSORT, 1959) has been head of the Experimental Engineering Department in the Reactor Division at ORNL for the past eight years. He is principally concerned with the development of high-temperature components and systems for both nuclear and nonnuclear applications. P. A. Gnadt (bottom right) (electrical engineering, University of Kansas, 1949) has been at ORNL since 1954 where he has been project engineer for experimental test facilities for ANP, PWR, MSR, MSRE, MSBR, and GCR reactor projects and project associated with NASA solar-heated dynamic power conversion system. L. F. Parsly (top right) (PhD, University of Pennsylvania, 1948) has been involved in plant design, reactor development, and reactor safety research since coming to ORNL in 1951. He was in charge of pilot plant studies of containment spray performance and at present is responsible for data processing for the FFM. J. L. Wantland (top left) (PhD, University of Tennessee, 1969) has been at ORNL since 1955 where he has done extensive experimental and analytical work in transport phenomena applied to diverse reactor systems. His present interest include LMFBR core heat transfer and fluid dynamics.

THERMAL AND IRRADIATION EFFECTS ON THE TENSILE AND CREEP-RUPTURE PROPERTIES OF WELD-DEPOSITED TYPE 316 STAINLESS STEEL

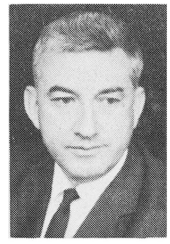
A. L. Ward



A. L. Ward (BS, physical metallurgy, Washington State University) is with the Materials Analysis Section of Westinghouse Hanford Company. His research has involved experimental studies of irradiation effects in reactor structural materials with recent emphasis on weld-deposited austenitic stainless steels.

DISPERSION-STRENGTHENED FERRITIC STEELS AS FAST-REACTOR STRUCTURAL MATERIALS

J.-J. Huet
V. Leroy



J.-J. Huet (left) (Met. Eng., Faculté Polytechnique de Mons, Belgium, 1954) is head of the Metallurgy Department at the Belgian Nuclear Center (CEN/SCK) in Mol. He joined the CEN/SCK in 1956 directly after his army duties. V. Leroy (Phys. Eng., University of Liège, 1960; Doctor Applied Sciences, 1966), who joined the CRM in 1961, is Chef de Service Adjoint at the Centre de Recherches Mètallurgiques in Liège, Belgium.

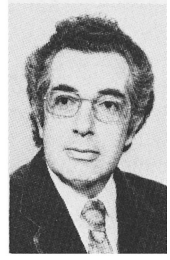
THE KINETICS OF DECARBURIZATION OF $2\frac{1}{4}$% Cr–1% Mo STEEL IN SODIUM

J. L. Krankota
J. S. Armijo

J. L. Krankota is employed by the Breeder Reactor Operation of the General Electric Company in the Plant Materials and Processes Unit concerned with the area of compatibility of sodium steam generator materials in the LMFBR environments. J. S. Armijo was the manager of the Plant Materials and Processes Unit. He is presently manager of the Fuel Chemistry Modeling Unit in the Boiling Waster Systems Operation. (Pictures not available.)

THE VISCOSITY OF UO_2-BASALT MELTS

L. Leibowitz
C. Williams
M. G. Chasanov

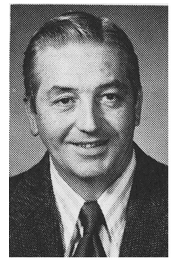


Leonard Leibowitz (top) (PhD, 1956) and Martin G. Chasanov (bottom) (PhD, 1952) are chemists in the Chemical Engineering Division, Argonne National Laboratory. Clayton Williams (center) (BS, 1971), scientific assistant, now in the Chemistry Division, was a member of the Chemical Engineering Division at the time of this work. Leibowitz and Chasanov have been engaged in reactor safety work for over ten years; Williams is currently working on photochemistry using lasers.

NUCLEAR EXPLOSIVE

RADIATION DOSES FROM HYPOTHETICAL EXPOSURES TO COMBUSTION PRODUCTS OF PLOWSHARE GAS DISCHARGED FROM STACKS

R. E. Moore
C. J. Barton

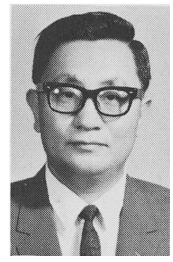


Robert E. Moore (left) (PhD, University of Chicago, 1950) is a staff member of the Environmental Sciences Division of Oak Ridge National Laboratory. His current interests include the development of computer programs to aid the estimation of doses from nuclearly stimulated natural gas and the developing methodology of assessing the release of radioactivity from nuclear facilities. Charles J. Barton (PhD, University of Virginia, 1939), also an Environmental Sciences Division staff member, is principally concerned with dose estimations related to peaceful uses of nuclear explosives.

ANALYSIS

NONDESTRUCTIVE BURNUP DETERMINATION BY GAMMA-RAY SPECTROSCOPY

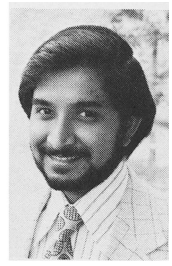
C. K. Tzou
C. M. Yang

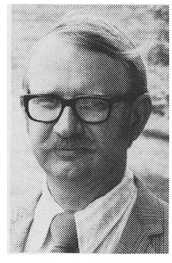


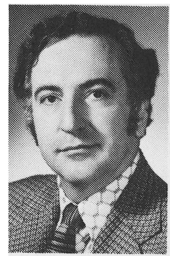
Chyun-Kai Tzou (left) (MS, nuclear engineering, National Tsin Hua University, Republic of China, 1972) is presently concerned with the field of burnup measurement. Chio-Min Yang (PhD, nuclear engineering, The Pennsylvania State University, 1967) is a professor in the Department of Nuclear Engineering, National Tsin Hua University, Hsinchu, Taiwan, Republic of China. His areas of interest are nuclear reactor physics, neutron transport theory, and neutron activation analysis.

THE APPLICATION OF POST-CUTTING CHIP ACTIVATION ANALYSIS TO THE STUDY OF TOOL WEAR

K. N. Prasad
W. A. Jester
F. J. Remick







Kadambi N. Prasad (top) (PhD, nuclear engineering, The Pennsylvania State University, 1971) worked at Bhabha Atomic Research Center, India, in reactor engineering from 1972 to 1973 and then joined the research faculty in nuclear engineering at Penn State. His current interests are biomedical application of nuclear technology and applications of dynamic radiography. William A. Jester (center) (PhD, chemical engineering, The Pennsylvania State University, 1965) is an associate professor of nuclear engineering at Penn State. His current technical interests are in application of neutron activation analysis in medicine and forensic science, environmental monitoring for radioisotopes, and biomedical applications of nuclear technology. Forrest J. Remick (bottom) (PhD, mechanical engineering, The Pennsylvania State University, 1963) is Director of the Institute for Science and Engineering and Coordinator of University Energy Programs at Penn State.