NUCLEAR APPLICATIONS & TECHNOLOGY

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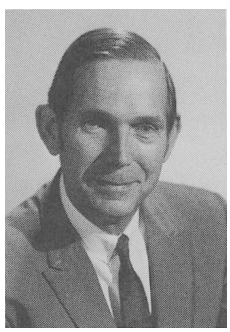
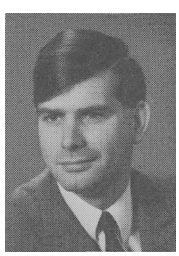


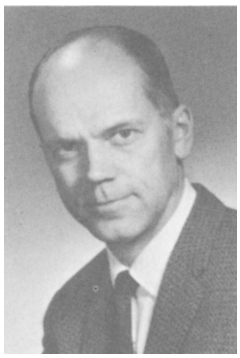
C. E. Weber

Clifford E. Weber, active in the development of nuclear fuel elements for power reactors since 1948, has long been associated with an analytical approach to fuel modeling with his work on dispersion-type fuels leading to one of the early applications of the computer to interpretation and prediction of fuel behavior. He is presently chief of the Fuel Engineering Branch, Division of Reactor Development and Technology, U.S. Atomic Energy Commission.



H. Kämpf, G. Karsten

H. Kämpf (top left) (PhD, University of Munich, 1965) is a member of the Karlsruhe Nuclear Research Center where he has been active in the field of fuel pin theory and design. G. Karsten (PhD, University of Munster) worked after graduation with Thyssen, A. G. as an engineer in automatic welding. Since 1964 he has been a scientist at Nuclear Research Center, GfK Karlsruhe, and is now manager of fuel development for fast reactors.



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T. R. Bump

T. R. Bump (BSME, MSME, Iowa State University, 1948-49; PhD, Purdue University, 1955) is a senior mechanical engineer at Argonne National Laboratory where he has worked for 15 years on the thermal-hydraulic-mechanical design of sodium-cooled fast-breeder-reactor power plants.

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K. R. Merckx

Kenneth R. Merckx (PhD, Stanford University, 1953) is a staff scientist at Battelle Northwest Laboratory and is presently working on developing design criteria for reactor fuel elements and on developing and evaluating material models.

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C. M. Cox, F. J. Homan

C. M. Cox (left) (PhD, University of Virginia, 1967) is head of the Fuels Evaluation Laboratory of the Metals and Ceramics Division, Oak Ridge National Laboratory. His current interests include the economic and performance evaluation and irradiation testing of potential LMFBR fuels. F. J. Homan (right) (BMetE, Cornell University, 1963), also of the Fuels Evaluation Group, is working in the area of fuel element design and model development.

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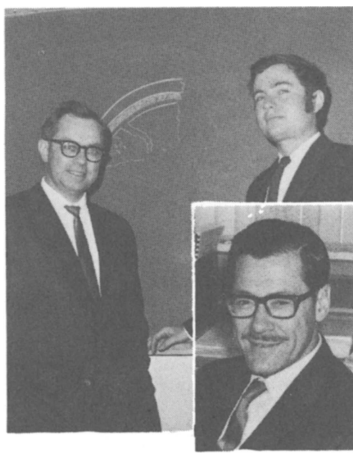
A. Boltax, P. Murray, A. Biancheria

A. Boltax (left) (ScD, physical metallurgy, Massachusetts Institute of Technology) is manager of Fuel Materials Technology; P. Murray (middle) (PhD, physical metallurgy, University of Sheffield) is manager of Fuels and Materials; and A. Biancheria (right) (PhD, physical chemistry, Clark University) is manager of Fuel Irradiations. The authors are engaged in the LMFBR program at the Westinghouse Advanced Reactor Division.



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D. P. Hines, S. Oldberg, E. L. Zebroski

Douglas P. Hines (left) obtained his BS in mechanical engineering from the University of California at Berkeley and carried on graduate studies in the Materials Science Department at Stanford University. Currently, he is manager of Advance Concepts and Stress Analysis and is responsible for fuel element modeling and design analysis. He is also in charge of advance development of core instrumentation. Sidney Oldberg, Jr. (top right) (MSE, mechanical engineering, University of Michigan) is engaged in studies of the mechanical interaction between fuel and cladding. E. L. Zebroski (bottom right) (PhD, University of California at Berkeley, 1947) has worked in the areas of radiation effects and nuclear power since 1944 and on fast reactor fuels and components since 1963. He is currently manager of the Sodium Reactor Technology Section.

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R. Bullough, B. L. Eyre, R. C. Perrin

Ronald Bullough (top left) (BSc, PhD, University of Sheffield, 1952-55) is a Fellow of the Institute of Physics and of the Institution of Metallurgists and is group leader in the Theoretical Physics Division at Harwell. His scientific interests include theoretical studies of radiation damage and defects in solids. B. L. Eyre (right) currently professor of Metallurgy at the University of Illinois, obtained his BSc in metallurgy in 1959 and is an associate of the Institution of Metallurgists. He joined the Atomic Energy Research Establishment in 1962 and, at present, is principal scientific officer and section leader of the Refractory Metals Group in the Metallurgy Division at Harwell. His scientific interests include the study of irradiation damage and its effects on the properties of solids. R. C. Perrin (BSc, PhD, Queen's University, Belfast) joined the Atomic Energy Research Establishment, Harwell in 1965 as a senior staff officer. In addition to the growth of voids in reactor materials, his current interests include the development of interatomic pair potentials for metals and their use to investigate the microstructure of dislocations and the motion of point defects.

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H. J. Reilly, L. E. Peters, Jr.

Harry Reilly (left) and Larry Peters (both MS, University of Toledo) do reactor analysis and experiment design work for the Nuclear Analysis Section at the NASA Plum Brook Reactor Facility. Reilly, head of the section, was formerly with WAPD-Bettis. Peters came to NASA from Indiana Institute of Technology where he received a BS in physics and mathematics.

FUELS

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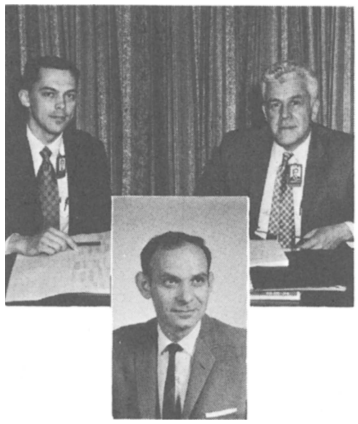
M. H. Fontana

M. H. Fontana (PhD, mechanical engineering, Purdue) has been involved in nuclear reactor accident analysis and in supporting research and development since joining the Oak Ridge National Laboratory in 1957. He is now assistant director of the nuclear safety program with primary responsibilities in R&D program development and LMFBR safety.

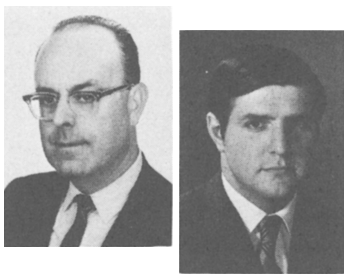
ECONOMICS



Henry Stone, A. de la Garza, R. L. Hoglund

Henry Stone (inset) was a project leader in AECOP in the area of advanced systems analysis. He is currently a consultant with Education and Economic Systems, Inc., Boulder, Colorado. R. L. Hoglund (left) is a member of the Long Range Planning Department at the Oak Ridge Gaseous Diffusion Plant. A. de la Garza (right) is responsible for advanced systems analysis in AECOP. Both de la Garza and Hoglund have long been with Union Carbide engaged in gaseous diffusion plant design, operations analysis, and long range planning. At the time the work was done, all three authors were associated with AECOP (Atomic Energy Commission Combined Operations Planning Group), a multi-contractor organization administered by Union Carbide Nuclear Division.

MATERIALS



J. R. Coombe, R. P. Shogan

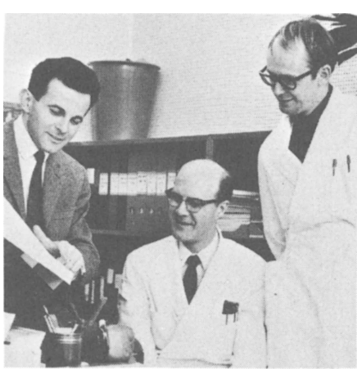
John R. Coombe (left) was responsible for the radiation effects programs in support of the NERVA program at the Westinghouse Astronuclear Laboratory until recently, when he left to join the Nuclear Energy Systems Division of Westinghouse. Regis Shogan is in the Materials Department in the Astronuclear Laboratory responsible for materials development for the NERVA program.

INSTRUMENTS

John Perreault, Lawrence Ruby

John Leo Perreault (left) (MS, University of California at Berkeley, 1969), an engineer working at General Electric AEPD in the field of plant testing, is now in Japan supervising the installation of a power reactor. The article herein is derived from work done while enrolled in the GE-UC cooperative advanced degree program. Lawrence Ruby (PhD, University of California at Los Angeles, 1951) is a professor of nuclear engineering at the University of California at Berkeley and is associated with the Lawrence Radiation Laboratory as a senior physicist. His interests are in accelerators, nuclear spectroscopy, and reactor kinetics.

ANALYSIS



J. Weitman, N. Dåverhög, S. Farvolden

J. Weitman (left) (MS, physics, Royal Institute of Technology, Stockholm) is head of the Reactor Radiation Group at AB Atomenergi, Studsvik. His interests include effective cross sections, radiation transport calculations and experimental nuclear techniques. He has lately been in charge of a major diversification program evaluation study at AB Atomenergi. N. Dåverhög (center) (MS, physics, Chalmers University of Technology, Gothenburg) is a PhD candidate, working on helium production cross sections in materials of interest for fast reactors. S. Farvolden (right) was with the Royal Norwegian Airforce before he joined AB Atomenergi. His interests are in instrumentation and electronics.

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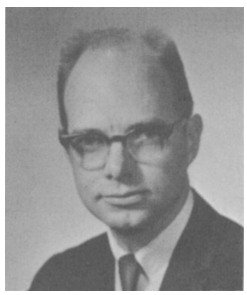
W. R. Sovereign, E. R. Ebersole, R. Villarreal, W. A. Hareland

William R. Sovereign (top left), engineering assistant at Argonne National Laboratory's Idaho (EBR-II) Facility, is interested in modification and design of analytical instrumentation for hot-cell and glovebox application. Earl R. Ebersole (top right) analytical laboratory manager, is responsible for all analytical work at the Idaho Facility. Robert Villarreal (bottom left), staff chemist, is particularly interested in rapid, highly specific microanalytical methods. Willard A. Hareland (bottom right), staff chemist, is primarily interested in physical methods for analysis of fuels and liquid metal coolants.



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T. T. Anderson

Since joining Argonne National Laboratory in 1959, Ted Anderson has developed instrumentation for experimental heat transfer programs and has performed experiments on boiling loop hydrodynamics. As a member of the Instrumentation and Control Section, Engineering and Technology Division, he is developing acoustic techniques to detect boiling of sodium coolant in fast breeder reactors.

RADIOISOTOPES

EFFECTIVE ALPHA ACTIVITY AND SELF-ABSORPTION ALPHA RANGE IN $^{238}PuO_2$ MICROSPHERES 434

Gary N. Huffman, Carl J. Kershner

Gary N. Huffman (left) (MS, University of Dayton, 1969) worked on the effective activity of $^{238}PuO_2$ microspheres at Mound Laboratory on his master's thesis project under a Monsanto Research Corporation Fellowship. He has been with the Nuclear Operations Department since 1963 and is presently studying the physical properties of new fuel forms of ^{238}Pu. Carl J. Kershner (PhD, Ohio University, 1961) has been with the Nuclear Operations Department at Mound Laboratory since 1961. During this period he has held a group leader position in the Plutonium and Polonium Isotopic Fuels Program and served as section manager for the Polonium Isotopic Fuels Development Program. Currently he holds the position of scientist and is involved with high temperature physical property research on isotopic fuels.

SHIELDING

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D. K. Trubey

D. K. Trubey has been involved in shielding and radiation transport research at Oak Ridge National Laboratory since 1953 and has been manager of the Radiation Shielding Information Center since 1966. He is a member of the editorial board of *Nuclear Engineering and Design.*

DEPARTMENTS