

# NUCLEAR APPLICATIONS & TECHNOLOGY<sup>®</sup>



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FEBRUARY 1970

VOL. 8/NO. 2



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*Alvin M. Weinberg*

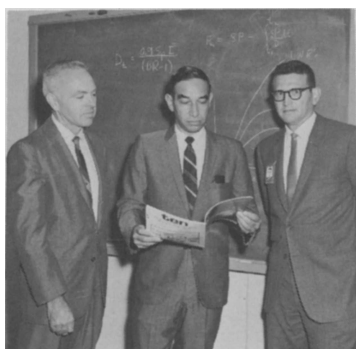
Alvin M. Weinberg (PhD, University of Chicago, 1939) has been Director of Oak Ridge National Laboratory since 1955, where he has been a major influence at the forefront of many phases of nuclear research and development. (His persistent stand as a champion of molten-salt reactors makes the Preface particularly appropriate. Editor.)

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Murray W. Rosenthal (center) (DSc, Massachusetts Institute of Technology, 1953), associated with ORNL since 1953, was appointed Director of the Molten-Salt Reactor Program in 1966. He directs ORNL's program to develop a thermal breeder reactor with molten-salt technology. Paul R. Kasten (right) (PhD, University of Minnesota), Associate Director of the Molten-Salt Reactor Program at ORNL and Professor of Nuclear Engineering (part time) at the University of Tennessee, has worked in the areas of reactor physics, analysis, and power reactor evaluation since 1950. R. B. Briggs (left) (Wayne University), Associate Director of the Molten-Salt Reactor Program, has participated in the design and development of several reactor programs at ORNL since 1942.



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*Paul N. Haubenreich, J. R. Engel*

Dick Engel (left) (BSChE, University of Toledo) and Paul Haubenreich (MSME, University of Tennessee) began working together in 1955 on the HRE-2. Both are early graduates of ORSORT (Haubenreich in 1951, Engel in 1954) and their interests cover all aspects of experimental reactor operation. Haubenreich has been in charge of the MSRE since its construction, while Engel has headed the MSRE operations analysis group.



*W. R. Grimes*

W. R. Grimes, in his more than 25 years in the atomic energy research effort, has been concerned with  $UF_6$  chemistry, chemical separations (including that of Hf from Zr), and chemistry of nuclear-reactor systems. His primary interest for many years has been behavior of molten salts as reactor fluids. He has been Director of the Reactor Chemistry Division of the Oak Ridge National Laboratory since 1958.

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*H. E. McCoy, R. L. Beatty, W. H. Cook, R. E. Gehlbach, C. R. Kennedy, J. W. Koger, A. P. Litman, C. E. Sessions, J. R. Weir*

All of the authors (shown in picture from left to right) are members of the Metals and Ceramics Division, Oak Ridge National Laboratory.

A. P. Litman (MS, University of Tennessee and Georgia Institute of Technology) is group leader of the Reactor Materials Engineering Group. Recent interests include corrosion of metals by fused salts, liquid metals, and gases. C. E. Sessions (MS, University of Tennessee) has studied alkali metal corrosion, and is currently involved with the irradiation studies on Hastelloy-N. W. H. Cook (MS, University of Texas, 1951) has studied the compatibility of ceramics and cermets with themselves and alkali metals and fluoride salts. He presently is responsible for the procurement and characterization of graphite. C. R. Kennedy (BS, Purdue University) has dealt primarily with mechanical metallurgy and is currently studying the effects of irradiation on graphite. J. W. Koger (PhD, University of Florida, 1967) has concentrated on the compatibility of structural metals with fluoride salts. R. L. Beatty (MS, University of Tennessee) has worked in the area of developing processes for depositing pyrolytic materials. R. E. Gehlbach (BS, University of Kentucky) (not shown) has worked principally on the characterization of the microstructures of engineering alloys and the relation of this structure to the mechanical properties. H. E. McCoy (PhD, University of Tennessee) (not shown) has worked in the field of irradiation damage to structural metals. Presently, he is group leader of the Mechanical Properties Group and coordinator of the materials work in support of molten-salt reactors. J. R. Weir (MS, University of Tennessee) (not shown) has done extensive work in the field of irradiation damage to structural metals and is currently section head in the Metals and Ceramics Division.



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*M. E. Whatley, L. E. McNeese, W. L. Carter, L. M. Ferris, E. L. Nicholson*

The authors are members of the Chemical Technology Division of the Oak Ridge National Laboratory.

M. E. Whatley (center) (PhD, chemical engineering, Iowa State College) is in charge of the Division's program on the processing of Molten-Salt Breeder Reactor fuels. He has been with the Laboratory since 1953 and has participated in the development of a variety of radiochemical processes. W. L. Carter (right) (PhD, chemical engineering, Georgia Institute of Technology) has been with the Laboratory since 1950. He is with the process design section and is primarily interested in flow-sheet calculation and cost estimating. L. E. McNeese (second from right) (MS, chemical engineering, University of Tennessee) is responsible for experimental engineering development for MSBR processing and has been with the Laboratory since 1957. His experience appropriately includes development study on fluoride volatility processes for power reactors. E. L. Nicholson (second from left) (BS, chemical engineering, Oklahoma State) is responsible for both the design aspects of MSR conceptual processes and the design of significant engineering experiments for this program. L. M. Ferris (extreme left) (MS, chemistry, North Dakota State) leads the group studying process chemistry of MSR processes. He has been with the Laboratory since 1955, during which time his interests have primarily been in chemistry of both aqueous and nonaqueous reactor processing systems.





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*Dunlap Scott, W. P. Eatherly*

Dunlap Scott (right) (BS, Georgia Institute of Technology) has been associated with molten-salt reactors since 1950 and is currently responsible for component and system development. W. P. Eatherly (MS, California Institute of Technology) is a solid-state physicist and has been involved with graphite for nuclear and space applications since 1949.



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*E. S. Bettis, Roy C. Robertson*

E. S. Bettis (right) (MS, Cornell) was project engineer for the first molten-salt-reactor experiment in 1954 and was design engineer for the Molten-Salt Reactor Experiment (MSRE). Roy C. Robertson (MS, University of Tennessee) came to ORNL in 1955 where he participated in the design of the aqueous homogeneous and the molten-salt reactor experiments. Robertson and Bettis now spend full time on conceptual designs for a 1000-MW(e) MSBR power station.



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*A. M. Perry, H. F. Bauman*

Alfred M. Perry (right), associated with ORNL since 1953 and head of their Reactor Analysis Department of the Reactor Division since 1960, has worked on reactor evaluation studies and design analysis for several reactor projects. Howard F. Bauman (MS, Illinois Institute of Technology, 1951) has been active in reactor development at ORNL since 1957.