



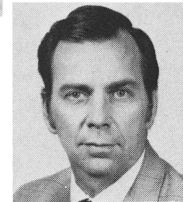
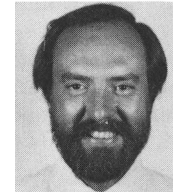
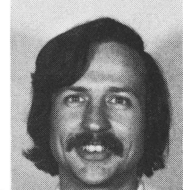
AUTHORS — MID-APRIL 1977

REACTORS

EXPERIMENTAL EMERGENCY CORE COOLING RESULTS FROM LOFT NON-NUCLEAR TESTS

L. P. Leach (top) (MS, business administration, University of Idaho, 1975) is experienced in thermalhydraulics and is currently managing the planning and analyses of loss-of-fluid test (LOFT) experiments at Idaho National Engineering Laboratory. L. J. Ybarrondo (center) (PhD, metallurgy, Georgia Institute of Technology at Atlanta, 1964) is assistant division manager of the LOFT Program with Aerojet Nuclear Company in Idaho Falls, Idaho. He is involved with the planning of the loss-of-coolant experimental test program, analytical predictions of tests, evaluation of test data, and planning and preliminary design for new uses of the test facility. G. D. McPherson (bottom) (PhD, University of London, 1966) joined the U.S. Atomic Energy Commission (AEC) in 1974. After following LOFT as cognizant engineer for the AEC and then the Regulatory Office of the U.S. Nuclear Regulatory Commission, he is now program manager of the LOFT Project.

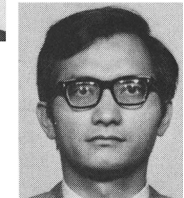
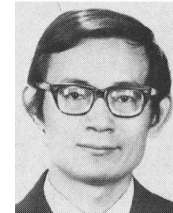
*L. P. Leach
L. J. Ybarrondo
G. D. McPherson*



THE INTERACTION AND PROTECTION OF SUPERCONDUCTING POLOIDAL FIELD COILS AND TOROIDAL FIELD COILS IN A TOKAMAK EXPERIMENTAL POWER REACTOR

H. T. Yeh (top) (PhD, physics, University of Illinois, 1967) is with the Oak Ridge National Laboratory (ORNL) Fusion Energy Division. His current research includes magnet system design for fusion reactors and investigation of three-dimensional eddy current calculation. J. W. Lue (PhD, physics, University of Pittsburgh, 1972) is with the ORNL Fusion Energy Division. His current research includes magnet system design for fusion reactors and investigation of superconducting magnet stability.

*H. T. Yeh
J. W. Lue*



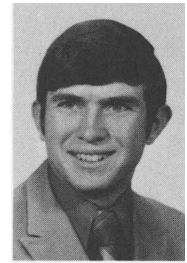
BYPASS FLOW DISTRIBUTION IN A BOILING WATER REACTOR

Roger W. Carlson (right) (BS, mechanical engineering, The Pennsylvania State University, 1962; PhD, nuclear engineering, Massachusetts Institute of Technology, 1966) is currently an associate professor at the Georgia Institute of Technology, where he teaches courses in nuclear engineering and pursues research in the area of computer modeling of all aspects of nuclear engineering. His current interests include the modeling of fuel performance in both thermal and fast reactors and also modeling the consequences of

*Roger W. Carlson
David R. Gott*



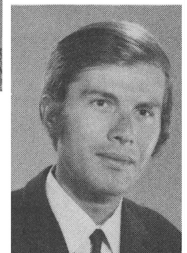
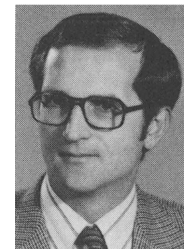
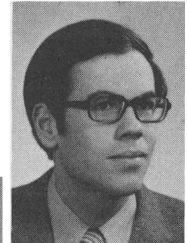
transients in reactor systems. David R. Gott (BS, mechanical engineering, 1974; MS, nuclear engineering, 1975, Georgia Institute of Technology) is an officer in the U.S. Navy assigned to the Division of Naval Reactors, U.S. Energy Research and Development Administration, Arlington, Virginia. He is presently working on the design and procurement of primary plant components.



ENERGY INVESTMENT IN NUCLEAR AND SOLAR POWER PLANTS

Günter Moraw (top) (PhD, technical physics, Technical University, Vienna, 1974) has worked as a research assistant at the Nuclear Research Center in Seibersdorf, Austria. He currently works at Kernkraftwerk-Planungsgesellschaft in Vienna in connection with nuclear and non-nuclear power systems. Michael Schneeberger (center) (PhD, nuclear fission, Commissariat à l'Energie Atomique, Saclay, France, 1968) has worked with Kraftwerk-Union, Germany, as a project engineer for nuclear power plants. He is presently responsible manager of technical and commercial aspects of core physics and nuclear fuel cycle for Austrian nuclear power stations at Kernkraftwerk-Planungsgesellschaft. Andreas Szeless (bottom) (PhD, nuclear engineering, University of California, Berkeley, 1970) has worked as a project engineer with Babcock-Brown-Boveri Reaktorbau, Germany, and is currently employed at Kernkraftwerk-Planungsgesellschaft, Vienna.

*G. Moraw
M. Schneeberger
A. Szeless*



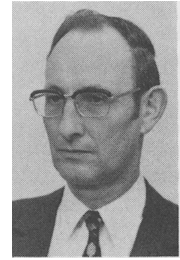
PLUTONIUM ASSEMBLIES IN RELOAD 1 OF THE DODEWAARD REACTOR

Hubert Bairiot (second from left) (metallurgical engineering, 1954, and actuary, 1955, University of Louvain; MS, Massachusetts Institute of Technology, 1957) joined Belgonucleaire in 1956 and, after training in the U.S. in fuels, was in charge of the plutonium fuel manufacturing development from 1960 to 1963 and of the Belgian Plutonium Recycle Program (partially sponsored by Euratom) from 1963 to 1972. He is presently responsible for the light water reactor (LWR) fuel activities of Belgonucleaire. Paul Deramaix (second from right) (electrical engineering, Faculté Polytechnique de Mons, 1960) has been working as a nuclear engineer at Belgonucleaire since 1962. As a member of the Applied Physics Department, he has been involved in plutonium recycle studies in thermal reactors since 1964. Since 1970, he has been in charge of LWR fuel projects. Claude Vandenberg (far right) (electrical and mechanical engineering, 1960; nuclear engineering, 1966, University of Liège) joined Belgonucleaire in 1962. He is presently head of the Core Physics and Safety Department. He is also a lecturer in nuclear engineering at the University of Liège. Léon Leenders (far left) (nuclear engineering, Institute for Nuclear Science of Saclay, 1962) has been at the Belgian Study Center for Nuclear Energy (SCK/CEN-Mol) for over 15 years. He was first involved in the experimental studies performed in the VENUS critical assembly. Now his activities also include experimental work in the field of

*H. Bairiot
P. Deramaix
C. Vandenberg
L. Leenders
P. Mostert*



irradiated fuel physics. P. Mostert (pictured separately) (degree, physics, "Ingénieur," Technological University of Delft, 1955) was a member of the scientific staff of the Delft University, responsible for the physics design of a pool-type reactor and the start of a physics lab (1955-1960). He joined the Central Research Labs of the Dutch Utilities at KEMA in 1961. He is presently head of the Reactor Physics Department at KEMA and is responsible for the physics experiments in the Dodewaard reactor, takes care of the fuel management of the Dutch reactors, and is involved in safety work for the Dutch Nuclear Program.



REACTOR SITING

THE HUMAN COST OF REGULATORY DELAYS

Tobias W. T. Burnett

Tobias W. T. Burnett (BS, electrical engineering, Virginia Polytechnic Institute, 1961; MS, nuclear engineering, University of Virginia, 1963; PE, University of Pennsylvania) is an advisory engineer in the Nuclear Safety Department at the Westinghouse Pressurized Water Reactor Systems Division. His interests include systems transient analysis, protection system design, and comparative risk assessment.

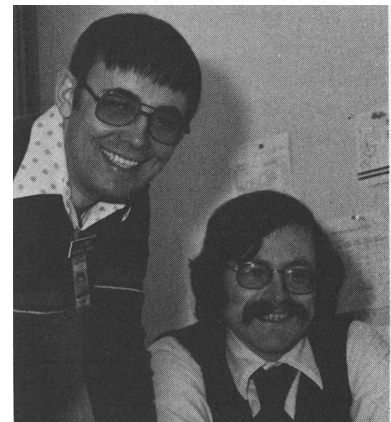


ECONOMICS

ANALYSIS OF ELECTRICAL POWER GENERATION COSTS

*R. W. Hardie
J. H. Chamberlin*

R. Wayne Hardie (left) (BS, physics, South Dakota State University, 1964; MS, nuclear engineering, Oregon State University, 1969) is manager of the Systems Analysis Section at Hanford Engineering Development Laboratory (HEDL). His interests include model development and analysis for reactor physics calculations and energy system forecasting. John H. Chamberlin (BA, economics, California State University, Chico, 1972; MA, economics, Washington State University, 1975; PhD, economics, Washington State University, 1976) is a member of the Systems Analysis Section at HEDL. His interests include the economics of the electrical energy industry and long-range systems analysis.

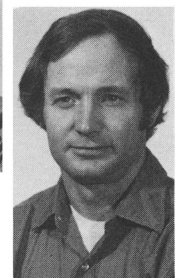
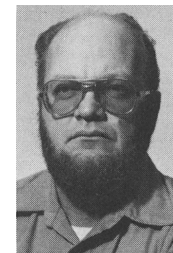


INSTRUMENTS

AN ANOMALOUS REACTIVITY METER

*H. A. Larson
J. I. Sackett*

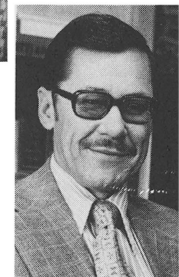
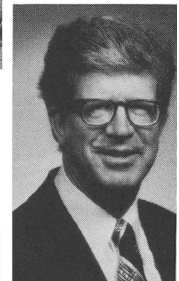
H. A. Larson (top) (PhD, University of Washington, 1970) is a staff member of the Argonne National Laboratory Experimental Breeder Reactor II (EBR-II) Project, working in the area of reactor analysis. His current interest is the application of safety codes to the proposed Liquid-Metal Fast Breeder Reactor Safety Test Facilities. J. I. Sackett (PhD, University of Arizona, 1970) is also with the EBR-II Project. He is manager of the Operations Analysis Section, with responsibility for safety analysis in support of EBR-II operation and modification. His current interest is in fast reactor safety.



THERMOGRAPHIC IMAGING OF NUCLEAR FUEL RODS

Sidney Oldberg, Jr. (top left) (MS, mechanical engineering, University of Michigan, 1963) is currently responsible for guiding a number of projects related to the light water reactor core and pressure boundary at the Electric Power Research Institute (EPRI). He has worked in a wide variety of nuclear energy fields, first at Lawrence Livermore Laboratory, later at General Electric's Breeder Reactor Department. Richard Honey (top right) (PhD, electrical engineering, Stanford University, 1953) is a staff scientist with the Electromagnetic Sciences Laboratory of Stanford Research Institute (SRI). He has been with SRI since 1952, involved in microwave and antenna technology, and since the advent of lasers, in electro-optics and laser technology and applications, including active and passive infrared systems. David Falconer (bottom left) (PhD, physics, University of Michigan, 1969) is a senior research physicist in the Artificial Intelligence Center of SRI. His professional interests center on computer image processing, especially image-analysis, feature-extraction, and picture-classification techniques. His specific areas of research activity include quantitative thermography for fuel-rod inspection, computerized tomography for pipeweld analysis, and retinal photography for cardiovascular risk assessment. Edwin L. Zebroski (bottom right) (PhD, physical chemistry, University of California at Berkeley, 1953) is the director of the Nuclear Systems and Materials Department at EPRI. Prior to joining EPRI, he held a variety of posts with General Electric's Nuclear Energy Division. Earlier, he held positions as Manager of Nuclear Engineering at SRI and as a project engineer for submarine reactor development at the Knolls Atomic Power Laboratory.

*Sidney Oldberg, Jr.
Richard C. Honey
David G. Falconer
Edwin L. Zebroski*



CHEMICAL PROCESSING

MINIMUM CRITICAL MASS OF PLUTONIUM-POLY-ETHYLENE SYSTEM FOUND TO BE SIGNIFICANTLY LOWER THAN PLUTONIUM-WATER SYSTEM

Jack K. Thompson (BS, chemical physics, Centre College, 1973) is a physicist in the Energy Systems Department of Battelle-Pacific Northwest Laboratories in Richland, Washington. His research interests are centered in nuclear physics, especially as it impacts on systems analysis of energy generation via nuclear reactions, both fission and fusion.

Jack K. Thompson

