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AUTHORS — NOVEMBER 1988

CRITICAL REVIEW

FILTERED VENTED CONTAINMENT SYSTEMS FOR LIGHT WATER REACTORS

Harry A. Morewitz

Harry A. Morewitz (PhD, physics, New York University, 1953) is an engineering consultant with H. M. Associates, Ltd., Tarzana, California. His recent publications have concerned aerosol behavior, air cleaning, and reactor source terms. For 35 years his technical interests have been in the areas of reactor safety and physics for both light water reactors and for liquid-metal fast breeder reactors. Between 1979 and 1982 he was a consultant to the Nuclear Safety Analysis Center and the nuclear safety department at the Electric Power Research Institute. Prior to that he managed reactor safety and physics programs at Rockwell International and Westinghouse Electric Company.

FISSION REACTORS

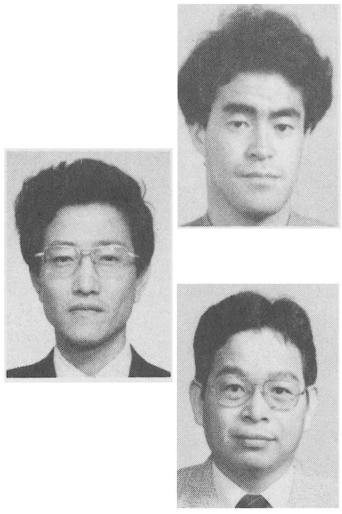
ASSESSMENT OF LONG-TERM RELIABILITY OF PRESSURIZED WATER REACTOR PLANTS BASED ON POWER GENERATION STATISTICS (UP TO 1987)

Masahiro Matsumura

Masahiro Matsumura (BS, electrical engineering, 1954; Dr. Eng., nuclear engineering, Tokyo University, Japan, 1978) has been a professor in the Department of Electrical Engineering at the Kanazawa Institue of Technology since 1986. He was previously a special assignment manager at the Kansai Electric Power Company. His main interest lies in the field of nuclear power generation.

STUDY ON CRITICALITY OF A LIGHT WATER MODERATED AND REFLECTED COUPLED CORE WITH HIGHLY ENRICHED URANIUM FUEL

Tsuyoshi Misawa
Seiji Shiroya
Keiji Kanda



Tsuyoshi Misawa (top) [MS, nuclear engineering, Kyoto University (KU), Japan, 1986] is a graduate student doing research for a PhD at KU. His current interest is statics and kinetics of coupled-core reactors. **Seiji Shiroya** (center) (MS, 1971; PhD, nuclear engineering, KU, 1986) is a research associate in the Critical Facility Division at the KU Research Reactor Institute (KURRI). His current interests are reactor physics experiments and analysis using the KU Critical Assembly, which include reducing the enrichment of research reactors, high-conversion light water reactors, and criticality safety study. **Keiji Kanda** (bottom) (PhD, nuclear engineering, Tokyo Institute of Technology, Japan, 1966) is a deputy director of the Critical Facility Division at the KURRI. His current interests are the thorium fuel cycle, reducing the enrichment of research reactors, neutron capture therapy of cancers, and neutron radiography.

EXPERIMENTAL AND THEORETICAL EVIDENCE FOR A SHORT EFFECTIVE FUEL TIME CONSTANT IN A BOILING WATER REACTOR

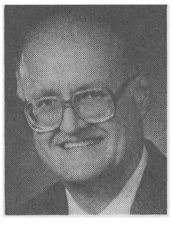
Tim H. J. J. van der Hagen

Tim H. J. J. van der Hagen (graduate physical engineer, Eindhoven University of Technology, The Netherlands, 1984) is a PhD candidate in the field of reactor physics. He is working at the Interfaculty Reactor Institute on light water reactor noise subjects.

FUEL CYCLES

SECONDARY PUREX SOLVENT CLEANUP: LABORATORY DEVELOPMENT

James C. Mailen

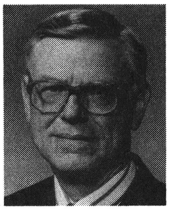


James C. Mailen (BS, chemical engineering, Kansas State University, 1959; PhD, chemical engineering, University of Florida, 1964) has been at Oak Ridge National Laboratory since 1963. He has spent a major portion of that time in studies related to fuel reprocessing and the behavior of actinides and fission products in reactors. He is currently a group leader in the study of fission product behavior in high-temperature gas-cooled reactors.

CHEMICAL PROCESSING

CANYON SOLVENT CLEANING WITH ACTIVATED ALUMINA

Donald J. Reif



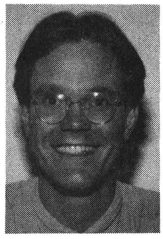
Donald J. Reif (BS, chemistry, University of Wisconsin, 1953; PhD, organic chemistry, Massachusetts Institute of Technology, 1957) has worked for E. I. du Pont de Nemours & Co., Inc. for 31 years, the last 10 years assigned to the Savannah River

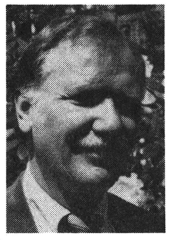
Laboratory. His primary interests are in areas of chemical separations involving the Purex process and related Savannah River Plant processes.

NUCLEAR FUELS

ANALYSIS OF MECHANICAL BOWING PHENOMENA OF FUEL ASSEMBLIES IN PASSIVELY SAFE ADVANCED LIQUID-METAL REACTORS

Per G. Reinhall
Kwanhum Park
Robert W. Albrecht



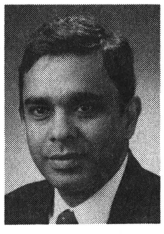


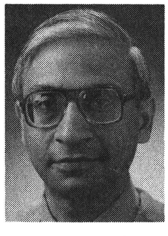
Per G. Reinhall (top) (PhD, applied mechanics, California Institute of Technology, 1982) is an associate professor of mechanical engineering at the University of Washington (UW). His research interests are in the areas of nonlinear dynamics, structural analysis, and acoustics. **Kwanhum Park** (photo not available) (BS, mechanical engineering, Busan National University, Korea, 1979; MS, mechanical engineering, UW, 1988; MS, mechanical engineering, Korea Advanced Institute of Science and Technology, Korea) is an engineer in the research and development department of the Hyundai Motor Company. He is currently involved in projects in the areas of structural mechanics and vehicle dynamics. **Robert W. Albrecht** (bottom) (PhD, nuclear engineering, University of Michigan, 1961) is a professor of nuclear and electrical engineering at UW. His interests are in reactor dynamics and reactor noise in the nuclear engineering field and in signal processing and robotics in electrical engineering.

RADIOACTIVE WASTE MANAGEMENT

IMPROVED TREATMENT/DISPOSAL OF REACTIVE METALS

John B. Rajan
Romesh Kumar
Donald R. Vissers





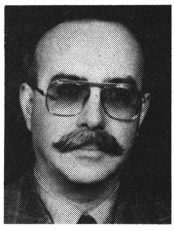
John B. Rajan (top) (MS, applied science, University of Saskatchewan, Canada, 1966; registered professional engineer, State of Illinois) has been active in materials and energy research and development for over 22 years. Areas of activity have included new process and product development, pollution control, and nuclear and hazardous waste management. His current research activity at Argonne National Laboratory (ANL) includes the modeling of the TRUEX process for the recovery of actinides and transuranics from high-level wastes. **Romesh Kumar** (center) (PhD, chemical engineering, University of California, Berkeley, 1972) is a chemical engineer at ANL. His early work included studies of tritium transport in sodium-cooled fast breeder reactors and reactor safety analysis for decay heat removal following hypothetical core disruptive accidents. His current research interests include fuel cells and hazardous and municipal waste disposal. **Donald R. Vissers** (bottom) (PhD, chemistry, University of Wisconsin, 1960) has worked at ANL for over 20 years in a variety of research areas. His nuclear research work in the past was directed primarily toward the development of the hydrogen activity meter and the hydrogen-meter leak detector for the liquid-metal fast breeder reactor program. His principal

interests at present are in the electrochemical areas of advanced batteries and uranium metal electroplating from molten salt systems.

ECONOMICS

THE ECONOMIC IMPACT OF THE UTILIZATION OF NUCLEAR POWER PLANT CONDENSATION HEAT

Ahmet Bayülken

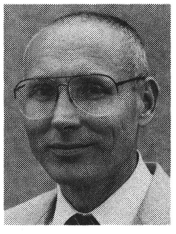


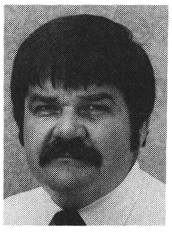
Ahmet Bayülken (BS and MSc, mechanical engineering, Istanbul Technical University, Turkey, 1970; PhD, research and development economics, La Sorbonne, Paris, France, 1976) has been an associate professor at the Institute for Nuclear Energy in Istanbul since 1971. He was the deputy director for research and education at Cekmece Nuclear Research and Education Center from 1983 to 1986. His major field of interest is in thermodynamic and economic analyses of power reactors. His other areas of interest are in neutron radiography; neutron shielding by means of Turkish colemanite, concrete, or paraffin wax; and thermohydraulic study of pressurized water reactors. He has also contributed to many theoretical works on the dual-purpose uses of nuclear power plants to be built in Turkey.

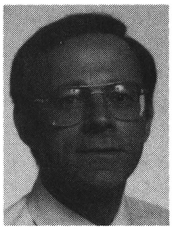
MATERIALS

CHARACTERIZATION OF REACTION GASES AND AEROSOLS FROM UNDERWATER PLASMA ARC CUTTING DEMONSTRATION TESTS AT THREE MILE ISLAND UNIT 2

V. F. Baston
K. J. Hofstetter
Richard F. Karuhn



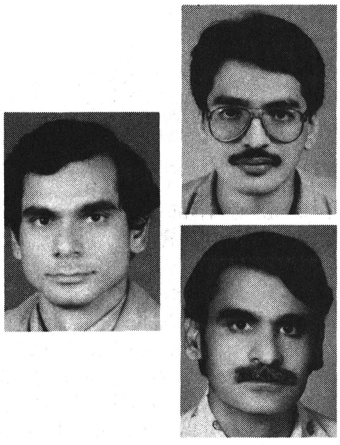




V. F. Baston (top) (BS, engineering-chemical option, 1960, and PhD, physical chemistry, 1965, University of Wyoming; postdoctoral, physical chemistry, University of Texas at Austin) is a registered professional engineer and head and corporate officer of Physical Sciences Incorporated, an engineering consulting firm with headquarters in Sun Valley, Idaho. Responsibilities include analytical model development and engineering evaluations involving process chemistry and engineering operations. **K. J. Hofstetter** (center) (AB, Augustana College, 1962; PhD, nuclear chemistry, Purdue University, 1967) is presently a research staff scientist at the Savannah River Laboratory in Aiken, South Carolina. Formerly, he directed liquid radwaste processing and radiochemical analyses at Three Mile Island Unit 2 (TMI-2) in recovery operations for GPU Nuclear Corporation. Prior to his work at TMI-2, he was a radiochemistry supervisor for Allied General Nuclear Services specializing in the development of nondestructive assay techniques and radiochemical analyses. Previous professional experience included a faculty position at the University of Kentucky. **Richard F. Karuhn** (bottom) (BS, chemistry, DePaul University, 1971) has been director of Particle Data Laboratories since 1979. His interest is in the analytical aspects of fine particle technology as it relates to industrial hygiene, process development, and industrial air pollution. Career background obtained from ITT Research Institute provided the foundation for his research in air monitoring.

HIGHER ORDER TOMOGRAPHIC FILTERS FOR NONDESTRUCTIVE TESTING PURPOSES

P. Arora
P. Munshi
R. K. S. Rathore



P. Arora (top) [M. Tech., Indian Institute of Technology (IIT), Kanpur, India, 1987] is a research assistant in the nuclear engineering program at IIT, Kanpur. His areas of interest are nuclear magnetic resonance, nuclear medicine, and health physics. **P. Munshi** (center) (MS, Ohio State University, 1979) is a lecturer in the nuclear engineering program at IIT, Kanpur. His areas of interest are two-phase flow, reactor safety, and tomographic systems. **R. K. S. Rathore** (bottom) (PhD, IIT, Delhi, India, 1973; DSc, Delft, Netherlands, 1974) is professor of mathematics at IIT, Kanpur. His interests include various aspects of approximation theory, numerical analysis, and linear algebra. His current activities are in the areas of image processing and computerized tomography.