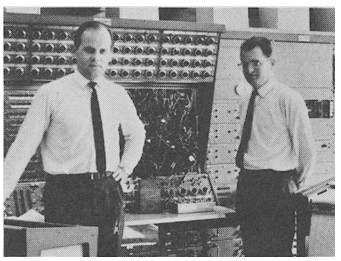
AUTHORS AND PAPERS

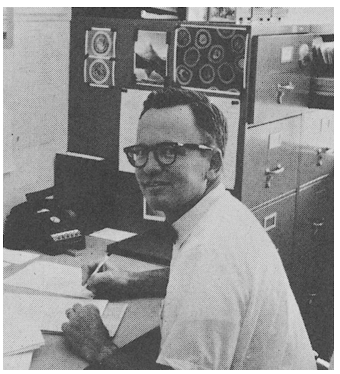
The highly condensed summaries of papers and technical notes (below) are intended to assist the busy reader in determining the order in which to read the technical material. Biographical comments are for human interest.



MARVIKEN BHWR DYNAMICS

The influence of the void and Doppler coefficients on the dynamic behavior of this boiling heavy-water reactor at full power and pressure has been studied by means of an analytical model and analog and digital computers.

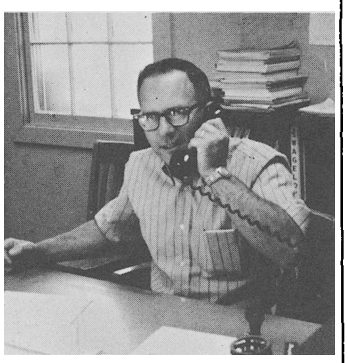
Torsten Spanne and Frigyes Reisch have worked three years to develop an analytical dynamic model of the Swedish BHWR. Mr. Spanne has been a staff member of the Swedish Power Board since 1955. Before joining AB Atomenergi in 1961, Mr. Reisch was employed for four years at ASEA, the principal contractor building the Marviken reactor.



COATED-PARTICLE FUELS IN HTR's

The design and operational characteristics of six high-temperature gas-cooled reactors are summarized, and detailed descriptions of their fuel elements, fuel compacts, and coated-particle fuel are presented.

For the past ten years Walter V. Goeddel has been involved in fuel development for HTGR's at General Atomic, where he was one of the pioneers in coated-particle fuels research. Presently responsible for all HTGR materials work at GA, he has been engaged in high-temperature materials research since receiving his MS from Caltech in 1950.



FUEL-ELEMENT SHAPES

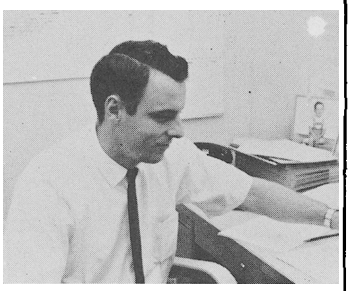
Comparing externally cooled fuel pins and internally cooled fuel tubes for otherwise identical reactors, indicates lower temperature differentials, lower thermal stresses and more effective fission-gas venting for the tube design.

Carl E. Walter is head of the Reactor-Systems Section, Propulsion Engineering Division, at the University of California's Lawrence Radiation Laboratory. A registered professional engineer (California), he received a BS (mechanical engineering) from Montana State College in 1951, and an MS (engineering science) from the University of California at Berkeley in 1959.

HELIUM PRODUCTION IN STAINLESS STEEL

The amounts of helium generated by irradiating stainless steel in thermal and fast reactors are calculated, and the uncertainties limiting the accuracy of the results are discussed.

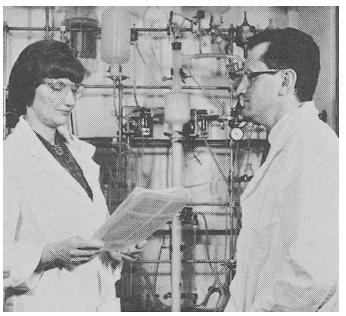
Andrew DePino, Jr., a physicist in the Radiation Effects Unit of the Materials Department at Battelle's Pacific Northwest Laboratory, is concerned with radiation effects on reactor materials and neutron dosimetry. His BA (1961) is from the University of Connecticut.



THERMAL CONDUCTIVITY OF FUEL BEDS

A study of the thermal conductivity of loose, pyrolytic carbon-coated fuel particles in helium from 1800 to 2700°F indicated that bed conductivity was relatively insensitive to the coating thicknesses and structures.

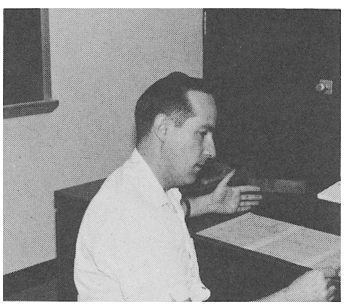
D. W. Stevens is a staff associate at General Atomic, where he has been involved with the development and evaluation of high-temperature nuclear fuel materials since July 1963. He is a physics graduate of San Diego State College.



LOW LEVEL γ-RAY SPECTROSCOPY

Several problems in detector design and data evaluation associated with γ-ray spectroscopy of very low-level radioactive samples have been resolved by use of a spectrum-resolution computer program.

Ernest Schonfeld is a chemist in the Chemical Technology Division at ORNL. For nine years he has specialized in the application of foam separation to the decontamination of radioactive waste. His BS (1954) and MS (1955) degrees are from the University of Buenos Aires.



INSTRUMENTAL REACTOR NEUTRON ANALYSIS

Instrumental neutron activation analysis of several elements in a refined hydrocarbon is supplemented by a technique that yields information on many remaining elements in the matrix by estimating upper limits to their concentrations.

Herbert P. Yule (PhD, University of Chicago) is an associate professor at Texas A&M University where his research includes reactor neutron activation analysis, computer data processing, and the interpretation of γ-ray spectra with NaI(Tl) and Ge(Li) detectors.

MEASUREMENT OF RADIATION HEATING RATES

Radiation heating rates in lead and polyethylene samples in various locations in the LPTR were successfully measured with steady-state and adiabatic calorimeters. Factors influencing their accuracy are discussed.

G. E. Cummings is operating supervisor for the Livermore Pool-Type Reactor, a research reactor used to support programs of the Lawrence Radiation Laboratory. He joined the staff of the LPTR in 1959 after receiving his MS in Nuclear Engineering from the University of California.