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.

NEGATIVE PIONS FOR RADIOTHERAPY

High-intensity monenergetic beams of π^- mesons, which may be available from accelerators by 1972, offer unique advantages for radiation therapy on deep-seated tumors since large localized deposition of high linear energy transfer radiations is possible with minimal damage to surrounding tissue.

Louis Rosen is head of the Medium Energy Physics Division at LASL, which has the responsibility for developing the Meson Physics Facility. He is a fellow of the American Physical Society and the American Association for the Advancement of Science. His E. O. Lawrence Award (1963) citation reads "For the development of new experimental techniques and their application to a better understanding of the nucleus as well as to the diagnosis of weapon behavior."

POST-ANNEAL PROPERTIES OF SM-1A VESSEL

The Army SM-1A reactor pressure vessel steel (A350-LF1, Modified) was examined for embrittlement after an in-place anneal, and assessed for reembrittlement after subsequent radiation service. From these data and calculations of neutron fluence, the vessel lifetime is estimated at 124.7 MW years.

Uldis Potapovs (left) (Met. E., University of Cincinnati, 1958) is a metallurgist in the Reactor Materials Branch at the Naval Research Laboratory. J. R. Hawthorne (center) (M. Met. E., Rensselaer Polytechnic Institute, 1955) is head of the Mechanical Metallurgy Section, and C. Z. Serpan, Jr. (BS, Ohio University, 1956) is head of the Radiation Environment and Engineering Section. The authors have been involved in pressure vessel steel research for the Army Nuclear Power Program.

FAST FUEL SINTERING FACTOR

An improvement in the efficiency of maximum allowable linear heat rate in fast-reactor fuel pin design is now possible, using a correction factor that accounts for the effects of in-core sintering and resulting fuel voids.

As senior research engineer in the Fast Flux Test Facility at Battelle-Northwest, E. G. Stevens (MS, Nuclear Engineering, MIT) is responsible for ceramic fuel design. He was formerly engineer-in-charge of operations at the Westinghouse Bettis High Temperature Test Facility where he was involved with fuel and material irradiations, and design and testing of critical assemblies.

A JAW CRUSHER FOR PLUTONIUM CERAMICS

A miniature crusher for subcritical amounts of plutonium ceramics was built according to optimized design parameters and found to operate as predicted.

James E. Ayer (left) (MSChE, University of Maine, 1952) is leader of Argonne plutonium-materials fabrication group. Before coming to Argonne, twelve years ago, he was an assistant professor in the School of Chemistry at the University of Alabama. His work is in the areas of metallic and ceramic nuclear fuels fabrication. Horacio A. Osuna, a graduate of the College of Chemistry, La Plata University, Buenos Aires, Argentina, is a research assistant with the Comision Nacional de Energia Atomica, Buenos Aires. He was recently assigned to Argonne for one year under the joint sponsorship of the Ford Foundation and the Argentina AEC.

THERMIONIC-HEAT PIPE POWER CONCEPT

A space power system using plutonium-233 nitride fuel, layers of radial heat pipes stacked alternately with slabs of fuel, out-of-pile thermionic diodes, and a sheathed boron-10 carbide control rod should deliver ~130 kW(e) in a smaller reactor than would be possible with in-pile diodes.

John L. Anderson (right) (BS, Eastern Kentucky State College; MS, University of Illinois) has been at NASA Lewis Research Center since 1963, working on nuclear power for space applications. Edward Lantz (BS, Case Institute of Technology; MS, Union College) has been with NASA since 1962 and is presently head of the Reactor Section at Lewis.

RADIOISOTOPIC FUEL IMPACT

A simplified model of an end-on impact of solid or granular fuel rods from a reentering radioisotope-powered space generator colliding with solid or granular earth materials, shows that the highest resistance to fuel fracture occurs with impacting materials of low density, small elastic modulus, and high porosity and crush strength.

Calvin C. Silverstein has been an independent consultant in the fields of heat transfer, energy conversion, and nuclear space systems since 1965. He has been associated with the nuclear-aerospace industry for 17 years, having served on the original SNAP-1 project.

TWO-REGION NEUTRON PULSING OF C_8F_{16}

The thermal absorption cross section, diffusion coefficient, and diffusion length for the fluorocarbon C_8F_{16} was determined by pulsing a C_8F_{16} core and H_2O reflector system with neutrons, and comparing the decay constants found with known constants from a water-graphite system.

C. A. Bisselle (inset), (PhD, University of Florida, 1967) teaches at the St. Albans School, Washington, DC. From 1961 to 1963 he was an associate officer with the IAEA's Division of Reactors in Vienna. John A. Wethington, Jr. (PhD, Northwestern University, 1950) is with the University of Florida. His nuclear energy career spans 25 years, beginning at the thermal diffusion plant at Oak Ridge.

GAMMA HEATING IN HEAVY ELEMENTS

A correction factor, applied to gamma heating measurements made with an aqueous dosimeter, predicts gamma heating in a thin tungsten detector in a water shield within an error of 10.2%.

John H. Lynch (foreground), Richard J. Crum (standing), and Harry J. Reilly are members of the Nuclear Analysis Section at the NASA Plum Brook Reactor Facility. Reilly, head of the section, and Lynch were formerly with Westinghouse Bettis Atomic Power Division. Lynch (MSES, Toledo University, 1966) does reactor physics, heat transfer, and shielding analysis for the reactor and reactor experiments, and Crum is involved in the design of major facilities and experiments for the reactor.

CALCULATED DECONTAMINATION BEHAVIOR

During decontamination of nuclear reactor plant a simple mathematical model allows "on-the-spot" control of chemical concentration to within ±10%.

Stuart K. Beal (left) (BSME, Virginia Polytechnic Institute; MSME, University of Pittsburgh) is currently developing mathematical models of crud buildup. Donald R. Henderson (BSChE, University of Rochester) is continuing the development of decontamination processes. Both are senior engineers at the Bettis Laboratory.

Corrigenda

On October 28, 1968, Joseph C. Stachew requested that we publish the following corrigenda, which apply to his article "Isotopic Analysis of Natural UO_2 Fuel Irradiated to 22 000 MWd/MTU. Theory vs Experiment," which appeared in the April 1968 issue of *Nuclear Applications*.

Delete the following:

p. 208, col. 2, the entire item 6), which presently reads: "6) The error in total plutonium due to the neglect of ^{241}Pu resulting from its small alpha activity is negligible."

p. 212, col. 2, the last two sentences in lines 3-8 which presently read: "This is partially due to systematic experimental error in neglect of ^{241}Pu by using alpha activity to measure total plutonium. The comparison indicates that ^{241}Pu is important and should not be neglected in the determination of total plutonium."

p. 216, col. 1, the entire last sentence of the first paragraph, which presently reads: "Also, the overcalculation of total plutonium indicates a need for an experimental determination that accounts for ^{241}Pu since this is presently being neglected using total alpha activity."

Mr. Stachew further states that only the validity of the three statements given above is affected, and none of the other information or conclusions in the test are affected.