

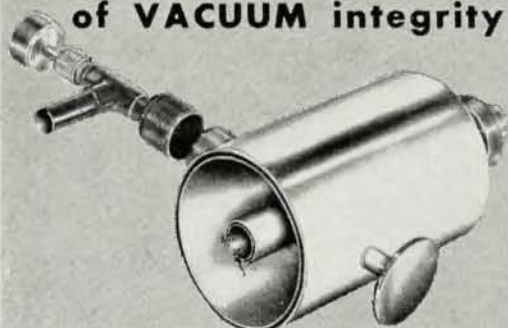
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leased to the Agency covers approximately 14 acres. In addition, the SGAE has granted the Agency an option on adjoining land in case of a possible future expansion of the IAEA laboratory.

On October 6th, the newly constituted Board of Governors of IAEA met in Vienna and elected D. B. Sole of the Union of South Africa as its chairman. Karel Petrzelka of Czechoslovakia and Ismail Fahmy of the United Arab Republic were elected as vice chairmen. The Board consists of representatives of 23 nations selected by the General Conference under a formula calling for the inclusion of states having advanced nuclear technology, of states that are producers of source materials and suppliers of technical assistance, and of states chosen on the basis of geographical distribution. Membership of the Board for 1959 comprises Australia, Brazil, Bulgaria, Canada, Ceylon, Czechoslovakia, France, India, Indonesia, Japan, Mexico, the Netherlands, Norway, Peru, the Philippines, Portugal, Spain, the Union of South Africa, the USSR, the United Arab Republic, the United Kingdom, the US, and Venezuela.

Plasmas

Grants of \$500 000 to the Massachusetts Institute of Technology and \$300 000 to Harvard University have been made by the National Science Foundation for basic research programs involving studies of the behavior of ionized gases. The two programs will be staffed by a combined total of nearly one hundred people and, according to a joint statement issued by the two schools, will establish Cambridge as one of the world's leading centers for research in the field. Emphasis will be on the developing of fundamental knowledge, and neither Harvard nor MIT plans to construct elaborate apparatus of the type required in attempts to produce controlled fusion reactions.

MIT's research on electrical plasmas will be carried out as part of the Plasma Dynamics Program headed by William P. Allis, professor of physics, and work under the new grant will be an extension of studies which have been supported for several years by grants from other agencies, including \$250 000 from the AEC under Project Sherwood, \$100 000 from Wright Field Aeronautical Center for research in energy conversion, \$25 000 from the Air Force Cambridge Research Center for the study of high-energy shock waves, and \$100 000 under a joint service contract with the Research Laboratory of Electronics for research in electronics. In addition to studies concerned with the ionosphere and its influence on radio communication and on the re-entry of missile nose cones, the MIT program will investigate the production of plasma by microwaves as well as the emission of microwaves from plasmas. Also planned is a study of the plasma produced in carbon arcs operating in a very high vacuum, in which the plasma consists of highly ionized carbon atoms.

Harvard's research on the behavior of gases at high

temperatures will be conducted in the High-Temperature Gas Dynamics Project under the leadership of Howard W. Emmons, Gordon McKay professor of mechanical engineering, and will be centered in the University's Division of Engineering and Applied Physics. The program will include a study of simulated atmospheres of various planets in the solar system in an effort to anticipate the problems that may be encountered when space vehicles enter such atmospheres. There will also be studies of rocket propulsion by electromagnetic means, combustion studies dealing with flames and detonations in various mixtures of gases and liquids, research on thermonuclear processes, and astrophysical investigations which will attempt to answer questions about sunspots, solar flares, and prominences. Also included in the latter part of the project will be studies of the naturally occurring high-temperature gases in the solar system and in some nebulae.

Facilities

Construction was started in September on a new \$430,000 high-energy research building at Columbia University's Nevis Cyclotron Laboratory located in Irvington-on-Hudson, N. Y. The building will be the fourth major structure at the Irvington site; others already in use include the cyclotron building, a laboratory structure, and an old carriage house that is used as a machine shop and administrative office. The new building will provide additional laboratory and office space and an experimental machine shop. It is scheduled for completion during the summer of 1960.

The second phase of construction of the Sterling Forest (N. Y.) research center of the Union Carbide Nuclear Company, a division of Union Carbide Corporation, was begun early this fall and is expected to take about a year to reach completion. The structures now being built are the research reactor building and the radioactive materials laboratory. The building will house a 5-megawatt nuclear reactor which will serve as the focal point of nuclear research activities for all Union Carbide divisions.

On September 22, the Mellon Institute officially opened the first two buildings at its Bushy Run Laboratories, which are located on a 230-acre site outside of Pittsburgh. The completed research facilities consist of the Radiation Research Building and the Chemical Hygiene Building, the first two in a projected series of special buildings, each of which is to be devoted to a particular field of scientific investigation. The project represents an expansion of the Institute's activities and supplements its main facilities in Pittsburgh. At the Radiation Research Laboratories, which are under the direction of Robert H. Schuler, formerly of the Brookhaven National Laboratory, the work involves studies of the behavior of various materials under high-energy irradiation. A 3-Mev Van de Graaff accelerator is the major experimental tool. The building also contains a special laboratory for advanced work

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