

many technical groups in other countries. For example, the Canadian General Electric Company has designed and constructed WR-1, an organic-cooled experimental reactor, for the Whiteshell Nuclear Research Establishment on a fixed price negotiated contract. The Canadian General Electric and Canadian Westinghouse companies are AECL's chief contractors for fuel element fabrication, and other work related to Canada's nuclear power program is carried out in collaboration with Shawinigan Engineering; Surveyer, Nenniger and Chenevert; Orenda Limited; Dilworth, Secord, Meagher and Associates; Montreal Engineering Company Limited and others. In general, AECL's policy is to stimulate the interest of private industry in the development of nuclear power so that these firms can take over construction of power plants when the opportunity arises, leaving AECL free for fundamental studies and developing new reactor concepts. For some years AECL expects to continue a consulting engineering role in the design of nuclear generating stations. AECL also lends general support to the nuclear and related studies of Canadian universities and lets contracts to the universities on specific problems.

To support their activities in this field, both industry and universities need ready access to information. This was one reason why industry set up the Canadian Nuclear Association, a body that has held a highly successful series of annual conferences at which both progress and the prospects for the future are reviewed. A commercially published magazine, *Canadian Nuclear Technology*, maintains the flow of general information and opinion. Detailed technical information is available principally from the library of the Chalk River Nuclear Laboratories, which lends about 650 items a month from its comprehensive collection of the world's nuclear literature. Information is also distributed from extensive depository collections at the libraries of the University of British Columbia, McMaster University and the National Research Council and from seven smaller collections located across Canada.

In the international field, close ties are kept with the United States Atomic Energy Commission (USAEC) and the United Kingdom Atomic Energy Authority, both of which have representatives permanently at Chalk River. There is an agreement with the United States for co-operative work on heavy-water-moderated reactors; it provides for the free exchange of all technical data in this field and a commitment by the United States to undertake research and development related to reactors of Canadian design. Collaboration has also been established with the International Atomic Energy Agency, the Organization for Economic Co-operation and Development, and Euratom, as well as with Australia, West Germany, India, Italy, Japan, Pakistan, Spain, Sweden, Switzerland, U.S.S.R. and, less formally, with Denmark, France and Norway. In India a major experimental reactor—the Canada-India Reactor—similar to NRX at Chalk River was constructed and was formally inaugurated in January 1961.

Two 200-megawatt units similar to that at Douglas Point are being constructed in India on a co-operative basis, known as the Rajasthan Atomic Power Project (RAPP). India has announced plans to install two more units on another site near Madras. A 137-megawatt station for the Karachi area is under construction by the Canadian General Electric Company on contract from the Government of Pakistan.

Research and Research Facilities.—At the Chalk River Nuclear Laboratories, basic and applied research is carried on by about 300 professional scientists and engineers supported by 350 technicians devoted to research in nuclear physics, nuclear chemistry, radiobiology, reactor physics, reactor fuels, radiation chemistry, materials science, environmental radioactivity, physics of solids and liquids, and other subjects, using as their primary facilities the two major reactors, NRX and NRU, the auxiliary reactors, ZEEP, PTR and ZED-2, a new tandem Van der Graaff accelerator and analytical facilities such as a precision beta-ray spectrometer, mass spectrometers, electron microscopes, multi-channel pulse analysers, automatic recorders, and analogue and digital electronic computers.

Basic research is carried on in many fields, especially that of the structure of atomic nuclei and of the interactions of neutrons, not only with individual nuclei but also with liquids and crystalline solids, particularly those involving energy transfer. For nuclear