



Bulletin

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CANADA'S ATOMIC ENERGY

The following excerpts are from the 1968-1969 annual report of the Atomic Energy of Canada Limited, which was published last month:

...In broad terms, AECL is responsible for research into and development of peaceful uses of nuclear energy, as a contribution to the general welfare and in the interest of scientific and technological progress in Canada.

More specifically, AECL has as its principal objective the development of nuclear power systems that will meet near- and long-term Canadian needs for low-cost energy and will be commercially attractive to other countries.

A second, major objective is to improve and extend the uses of radioisotopes and nuclear radiation, in the diagnosis and treatment of disease and in industrial and other applications....

The company's main research and development centers are the Chalk River Nuclear Laboratories, Ontario, and the Whiteshell Nuclear Research establishment, Pinawa, Manitoba. Additional research and development work is carried out, on a contract basis, by private industry and universities.

The Power Projects group, with a design office and development laboratory at Sheridan Park, Ontario, and a design office at Peterborough, is responsible for nuclear power system design, nuclear engineering consulting services, development and testing of major equipment items for nuclear power stations and project management as required.

The Peterborough office of Power Projects comprises the former nuclear power system engineering group of Canadian General Electric Company Limited. At the suggestion of CGE, AECL assumed responsibility for the direction and support of the CGE nuclear

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engineering group effective July 1, 1968. The merger agreement is for five years, with appropriate cancellation arrangements.

The Commercial Products group, with offices and manufacturing plant at South March, Ontario, and a laboratory in Ottawa, processes and markets radioisotopes, designs, manufactures and sells related equipment, and directs a research program in the application of radiation and radioisotopes.

CANDU

The Canadian nuclear power system is named CANDU, from its use of heavy water (deuterium oxide) as the reactor moderator and natural uranium as the fuel. Its essential and outstanding feature is its economical use of neutrons, the nuclear particles that play an essential part in the fission process. Neutron economy is based on and achieved through the use of the most efficient moderating material, heavy water, and by the design of a system and choice of reactor materials that are consistent with the neutron conservation principle. As a result, CANDU reactors have the advantage of being able to burn natural uranium fuel, and to do so efficiently.

The ultimate benefit from neutron economy is that the uranium consumption and fuelling costs of