

HEAVY-WATER PRODUCTION PACT

Mr. Donald S. Macdonald, Minister of Energy, Mines and Resources, recently announced that Atomic Energy of Canada Limited and Polymer Corporation Limited had agreed to collaborate in the development of advanced processes for the production of heavy water.

Research into new methods of heavy-water production had for some years been carried on at AECL's Chalk River Nuclear Laboratories. Under the terms of the agreement, Polymer will take the leading role in development work, building and operating experimental facilities at Sarnia. Expenditures from \$1 million to \$2 million a year are expected if the processes being developed continue to look attractive.

NEW PROCESSES

Existing Canadian heavy-water production plants separate heavy water from ordinary water with the aid of hydrogen sulphide. Two new production methods under consideration are a steam-hydrogen-amine process and a hydrogen-water process. The former process involves the removal of heavy hydrogen from steam with the aid of ordinary hydrogen. The heavy hydrogen is then concentrated with the aid of an amine, a compound formed from ammonia. In the hydrogen-water process, heavy water is removed from

ordinary water with the aid of ordinary hydrogen and a catalyst developed by the Chalk River Nuclear Laboratories.

Potential advantages of the new processes are lower capital cost, lower energy consumption, smaller equipment, less corrosion and the elimination of hydrogen sulphide from the system. Additional heavy-water production plants will certainly be built, and the potential advantages of the new processes are obviously attractive. There is much development work still to be done, however, and it is estimated it will be ten years before a commercial plant can be designed, built and brought into operation.

Heavy water is a constituent of the Canadian nuclear-power system. Its employment as moderator in Canadian-type CANDU power reactors permits the efficient use of natural uranium fuel and contributes toward appreciably lower fuelling costs than those of any other current systems.

There are three heavy-water production plants in Canada: a 400-ton-a-year plant at Port Hawkesbury, Nova Scotia, owned by Canadian General Electric Company Limited and now producing heavy water; an 800-ton-a-year plant at Bruce nuclear power development near Kincardine, Ontario, owned by Atomic Energy of Canada Limited and being readied to go into production; and a 400-ton-a-year plant at Glace Bay, N.S., originally built by Deuterium of Canada Limited and now on lease to AECL for rehabilitation, with initial production scheduled for 1975.

The totem-pole in Plaza Canada, Buenos Aires, underwent a facelift this summer, with the co-operation of Canadians at home and in Buenos Aires and the municipal administration of the Parks and Monuments Department of the Argentine capital.

Carved in British Columbia by Tony and Henry Hunt under the supervision of Wilson Duff, Director of the British Columbia Provincial Museum in Victoria, the totem-pole was dedicated in 1964 at the same time as Plaza Canada in 1964 by the Canadian Ambassador to Argentina Mr. R.P. Bower.

In the intervening years, the colours of the pole had become dull and the Plaza had fallen into a state of disrepair. Technical advice, supplies and labour for the repair work were all provided free of charge.

