

Supply—Industry

Defence Production. That is all I propose to say about the Department of Industry.

Turning now to the atomic energy estimates, votes 1 and 5, which, as I mentioned can be found on page 38 of the main estimates, I would point out that these votes concern the expenditures of the atomic energy control board, regulatory body set up by the Atomic Energy Control Act in 1946. The primary function of the board is to control dealings in atomic energy materials and equipment in the interests of national security and health and safety. It administers this control by means of a licensing system operated under the atomic energy control regulations.

Vote No. 1 is to provide for administration expenses of a staff of 15 employees and two advisory committees to assist the board in its operations. Most inspection of atomic energy activities is carried out on behalf of the board by other organizations, such as the Department of National Health and Welfare and provincial health departments, but the board's staff includes inspection officers with experience in the design and operation of nuclear reactors and in the problems of nuclear safety associated with the handling of enriched uranium.

Under the Atomic Energy Control Act the board is also authorized to make grants in aid of atomic energy research and training. Since the war the board has assisted Canadian universities to purchase and operate major items of atomic energy equipment to enable them to carry out fundamental atomic energy research and to train the engineers and scientists needed for future atomic operations in this country. Vote No. 5 is for the purpose of continuing this aid for university atomic energy research and training.

Votes Nos. 10 and 11 relate to Atomic Energy of Canada Limited, a crown corporation. Its work may be divided roughly into three parts. These, of course, are closely related and progress in one usually yields side results that are important to the others. The first part of A.E.C.L.'s work, and one I will be referring to briefly later on, is fundamental research in all areas of nuclear science. The second, and by far the largest part of A.E.C.L.'s work, is to promote the use of uranium as a source of economic power. This means applied laboratory research and large scale industrial development. The third part of A.E.C.L.'s work is to promote the production and use of radioisotopes as tools in medicine, industry and many other fields of endeavour.

During the last parliament a special committee on research engaged in a study of A.E.C.L.'s work. I am sure members of that committee will remember that A.E.C.L. has

centred its nuclear power program on reactors that use natural uranium for the fuel and heavy water for the moderator. This system is technically and economically attractive, particularly for public utilities in regions where water power has already been fully harnessed and where there is no low cost coal, oil or gas.

One of its many attractions is that the fuel system is much simpler than that of other nuclear power systems, since no elaborate plants are needed to prepare the fuel for the reactor and no chemical processing needs to be done after the fuel leaves the reactor, having served its purpose.

Canada's first nuclear power station has now been in operation for more than a year. It is located about 140 miles from here, near Rolphton, Ontario. The day to day operation of the station is under the control of the Hydro-Electric Power Commission of Ontario, which feeds the electricity produced into its electricity network. In the last year the station has been operated for specific periods to demonstrate that it is reliable and can stay on line for extended periods of time. Between these demonstration runs, components have been checked and improvements made to the plant. It is interesting to note that the major causes of trouble in the demonstration runs came from the more conventional items of equipment, such as turbine valves and auxiliary diesel motors, rather than from the nuclear portion of the plant.

This N.P.D. station is small, and generates only 20,000 kilowatts of electricity. Another station with 10 times the output is under construction by Atomic Energy of Canada Limited at Douglas point on the eastern shore of Lake Huron. Ontario Hydro is again cooperating in the construction and will operate the station when it is complete. The construction is going very well and should be finished on schedule less than a year from now. One of the most gratifying features, and I am sure this will commend itself to all hon. members, is that the costs to date are slightly lower than had been estimated. A.E.C.L. expects Douglas point to begin operating at full power during 1965, and when its performance has been adequately proven Ontario hydro has indicated its intention to buy the station from Atomic Energy of Canada Limited.

Mr. Douglas: This is a heavy water plant?

Mr. Drury: This is a heavy water using plant but not a heavy water production plant.

But even Douglas point is being dwarfed by designs that are now under preparation. Requirements are developing for stations to produce 500,000 kilowatts, or 500 megawatts, and probably for several such stations on a