REVIEW OF AECL HEAVY WATER PRODUCTION PLANTS*

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ABSTRACT

AECL heavy water production plants are in operation at Port Hawkesbury and Glace Bay, Nova Scotia and one is under construction at La Prade, near Gentilly, in Quebec.

The Port Hawkesbury Heavy Water Plant was in operation for most of the year, although its production was limited by equipment failures and a shut-down for the replacement of the steam supply header from the Point Tupper steam generating units. Nevertheless, the production for the fiscal year ending in March, 1977, was 175 Mg. Since then the plant has achieved steady conditions and has set new AECL records for extraction (89.4% design) and production (80.9% design).

At the Glace Bay plant commissioning and start-up activities dominated 1976. H$_2$S was charged to the north enriching unit in January, 1976, the first heavy water was drummed in June and the complete plant was on-stream in September of that year. However, in December, an inspection of the flare stack was accompanied by a release of H$_2$S, causing the plant to be shut down for investigation until February, 1977. Subsequently, the north G.S. unit was shut down due to damage to the process heat exchangers. Despite these problems a total of 69 Mg was produced in the fiscal year ending in March, 1977.

Construction at La Prade suffered from financial constraints in 1976 which delayed the work and set back the date of the projected first operation of the complete plant until 1982. Despite this, work has continued on the construction of the main G.S. towers and other major equipment items and its pace is expected to accelerate later this year.

Estimates of the supply and demand for heavy water have remained substantially unchanged over the past year.

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