

and 11,500 tons of uranium oxide to be delivered during the 1970s, a sale worth more than \$100,000,000.

France and Japan will need even larger amounts of uranium, as will Britain, as new nuclear reactors come into operation.

In the United States, private power companies have been rushing into the nuclear field. In the first nine months of 1966 private firms either started construction on or announced plans to construct enough nuclear power plants to provide 15,000,000 kilowatts. That's seven times the currently-installed nuclear generating capacity of the U.S. and enough power to serve 15,000,000 people.

Nuclear power plants are not really that much different from conventional hydro or fossil-fuel-fired (coal or oil) stations. The object of all three is to turn a giant turbine which provides the electric power.

In hydro installations, falling water is used to power the turbines; in fossil-fuel stations the fuel is burned to provide heat, turning water into steam for the job. In a nuclear station, the nuclear reactor provides the heat to produce the steam.

Heavy water is expensive and in Canada has provided the basis for a new industry in Cape Breton. Two giant plants, one almost completed and another in the planning stages, will separate the one gallon of heavy water that occurs naturally in every 7,000 gallons of natural water.

BET ON HEAVY WATER
The Pickering plant will need 875 tons of heavy water—costing about \$35,000,000—compared to only 233 tons of uranium, which will provide the same amount of heat as the burning of 4,900,000 tons of coal.

Canadian scientists are gambling that future reductions in the cost of heavy water will provide cheaper power than other types of nuclear reactors, which use a specially-enriched form of uranium to create a greater number of neutrons to achieve the same result.

The Pickering and Douglas stations in India and Pakistan and is negotiating for another in Finland. Even if these countries do not purchase all their power plants from Canada, they may have to rely on Canadian uranium to produce the power. Britain recently signed a contract for between 8,000

Point stations use heavy water not only as a moderator—to slow the neutrons—but also to transfer the heat from the heart of the reactor to a steam generator which provides the power for the turbines.

But the Quebec plant will use a modified process where natural water will be circulated through the heart of the reactor and heated directly. Heavy water will still be required as the moderator but, with natural water used in the steam cycle, the initial amount of heavy water required for the reactor will be reduced—thus lowering the capital cost of the installation.

Scientists at AECL's new establishment at Whiteshell, Man., now are studying use of wax-like organic compounds that eventually may be used to transfer the heat from the reactor more efficiently—at greater temperatures and without absorbing as many neutrons as natural water will at Quebec.

Scientists and engineers also are trying to develop modified designs to lower the cost of smaller nuclear power plants to make them practical for use in isolated regions—Canada's North, in particular. They are making steady progress but still are a few years away from the dream of unlimited power to develop the Arctic.

WILL WALK TO EXPO

LONDON (CP)—Dr. Barbara Moore, Britain's eccentric long-distance walker, said Friday she plans a hike of 500 miles or so in the United States and Canada to mark the opening of Montreal's Expo in April. The 63-year-old Russian-born marathoner walked into The Canadian Press bureau here to announce she has accepted an invitation to begin a walk somewhere in the U.S. and end it at Montreal, perhaps on April 28, opening day of Expo 67.

BEARDED BOY BACK IN CLASS

TORONTO (CP)—Robert Kellar, 20, who was ordered by his Danforth Technical School vice-principal to go home and shave off his beard, has returned to class still sporting his whiskers.

Barry Lowes, chairman of the Toronto board of education, said the Grade 12 student will be allowed to wear his beard in school "for medical reasons only."

Robert had not been to school since last Thursday when he was ordered by vice-principal Eric A. McCann to go home and shave. The student has a doctor's letter saying he has a facial fungus infection and shaving aggravates it. Kellar said he had not shown the letter to Mr. McCann, but did tell him of its existence.

Mr. Lowes said Mr. McCann felt the beard was a contravention of the Schools Administration Act which states that pupils must be neat and tidy in dress and appearance.

Damages Asked From Breweries

QUEBEC (CP)—Three actions claiming damages against Dow Breweries were filed in Superior Court here by persons who allege they suffered from myocardiosis, a heart disease, after drinking beer.

The actions were brought by J.-C. Gingras who is claiming \$23,465; Magella Marcoux whose claim is for \$21,890 and Guy Hebert who asks \$19,500. All are from Quebec City.

Last autumn and spring 20 persons died of a disease diagnosed as myocardiosis in the Quebec City region. All were said to be heavy



GRAVE-DIGGERS FORM PICKET LINE

About 25 striking employees at the Mount Royal cemetery in Montreal parade with placards in front of the gates.

The grave-diggers went on strike Thursday night in protest against delays in contract negotiations.

(CP Wirephoto)

MARTIN GREETED IN ROME BY FANFANI

Canada's External Affairs Minister Paul Martin, LEFT, is greeted at Rome's airport Sunday by Italian Foreign Minister Amintore Fanfani.

Martin arrived from Leningrad by special Canadian military plane after talks with Soviet officials. He is in Rome to confer with the Italian gov-

ernment and Pope Paul VI on the Viet Nam and other problems. (CP Wirephoto by cable from Rome)

Ontario And Quebec Most Likely For Nuclear Power Development

By BOB MacKENZIE OTTAWA (CP)—Just a little more than 20 years ago the world was startled by news of the development of the atomic bomb. Today attention still is focused on the military applications of nuclear energy although nuclear energy has been harnessed in a number of ways for peaceful use.

If you live in Ontario, the power you are getting from an electrical outlet could well have come from a nuclear reactor and the chances of this happening will increase sharply during the next decade.

The same holds true throughout the world although development of nuclear power plants will depend to a great extent on natural resources available in individual regions.

In Canada, cheap supplies of other fuels—coal and gas—in the Maritimes and the West probably will restrict nuclear power development in the next decade to Ontario and Quebec. This situation could change suddenly if second-generation plants now on the drawing board can achieve major cost reductions.

But even the plants operating now can compete with other electric power sources and they have several advantages.

Use of uranium fuel eliminates the smoke problem of coal-burning plants or the fear of power shortages in drought years from hydro plants. Also, the plants can be built close to the region needing the power, eliminating costly transmission lines now required for some distant hydro installations.

BIG PLANTS COMING
power plant near Rolphton, Ont., 110 miles northwest of Ottawa, went into operation in 1962.

Canada's first major nuclear power station—at Douglas Point on Lake Huron—will start producing power early next year—supplying 200,000 kilowatts from its \$81,800,000 plant.

In 1971, the giant, 1,000,000-kilowatt plant now under construction at Pickering, Ont., on Lake Ontario 20 miles east of Toronto, will start producing power dividends.

Both will be operated by Ontario Hydro, although the Crown-owned Atomic Energy of Canada Ltd. is building the Douglas Point plant. When operating, it will be sold to Ontario for a price based on the cost of a coal-fired station providing the same output.

Quebec's power needs are not quite as immediate as those of Ontario, especially with the recent deal to purchase power from the Churchill Falls hydro project in Labrador. But Quebec already is committed to one station near Trois-Rivieres that will produce 250,000 kilowatts.

This project will use a different type of heat transfer process from the reactor to the steam turbines and no firm date has been set for

operation. However, AECL officials are confident it will be in operation by 1974 at the latest.

OTHER COUNTRIES AHEAD

The nuclear power boom in Canada is only starting but Britain's first nuclear plant opened in 1956 and France, the United States, Japan, Russia, India and Pakistan already have plants operating or under construction.

Canada's early entry into the nuclear energy field more than 21 years ago at Chalk River, Ont., placed the country among the leaders in nuclear technology and as a result opened the doors to

lucrative export markets for nuclear power stations.

Canada already is building stations in India and Pakistan and is negotiating for another in Finland.

Even if these countries do not purchase all their power plants from Canada, they may have to rely on Canadian uranium to produce the power. Britain recently signed a contract for between 8,000

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Signed: J. A. MacLEOD,
Poll Chairman.
All persons interested in the P.C. Party are invited to attend. And a special invitation to the ladies and young people over 17 years of age.

THE PROVINCIAL BANK OF CANADA

CONDENSED FINANCIAL STATEMENTS OCTOBER 31, 1966

ASSETS	1966	1965
Cash resources	\$ 69,428,449	\$ 58,951,026
Securities	124,319,126	121,897,975
Call loans	24,821,193	3,190,460
Other loans	34,673,368	329,677,836
Bank premises	6,990,906	6,334,644
Letters of credit and other assets	8,197,034	8,336,892
	<u>\$568,421,058</u>	<u>\$543,107,341</u>
LIABILITIES		
Deposits	\$536,117,814	\$511,625,881
Letters of credit and other liabilities	4,499,079	4,367,636
	<u>\$540,616,893</u>	<u>\$515,993,516</u>
Capital, rest account and undivided profits	27,804,165	27,113,825
	<u>\$568,421,058</u>	<u>\$543,107,341</u>
UNDIVIDED PROFITS ACCOUNT		
Operating profits for the year	\$ 4,585,340	\$ 4,463,115
Provision for income taxes	2,320,000	2,260,000
Net profit	\$ 2,265,340	\$ 2,203,115
Dividends	1,575,000	1,530,000
	\$ 690,340	\$ 673,115
Balance of undivided profits, previous year	113,825	140,710
Total	\$ 804,165	\$ 813,825
Transferred to rest account	700,000	700,000
Balance of undivided profits, October 31	\$ 104,165	\$ 113,825

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