



CANADA

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THE CANADIAN URANIUM INDUSTRY

(Excerpts from a paper entitled "Uranium in the Western World" by S.W. Clarkson, published recently by Atomic Energy of Canada Limited)

In 1958 about 13,500 tons of U308 were produced in Canada valued at approximately \$275 million. Uranium contributed no less than 25 per cent of the total value of all metallic mineral production in Canada. It was substantially more important than the next important minerals, nickel, iron-ore, gold or copper.

In the vital export market uranium contributed 5.7 per cent of the value of all Canadian exports. As an export commodity, it was exceeded in importance only by wheat, paper, pulp and lumber. It was more important than aluminum, nickel, copper, aircraft and iron-ore, which followed it in that order. If we consider our trade with the United States, uranium made up 9.3 per cent of the value of all exports to that market and was second in importance only to newsprint.

The uranium industry has grown in the short space of a few years from a small mining industry to one of the nation's largest and most important activities. New towns have been established, bringing with them all the necessary accoutrements for community living. An increasing number of people employed particularly in transportation and the service industries, while not directly engaged by the uranium industry, rely upon it for their livelihood. The risks of a primary producer are great, and when new semi-isolated communities are completely dependent on the international

market for a single staple product, even a minor dip in world demand can be a disaster to particular areas.

The Nova Scotia coal industry provides an interesting analogy. With an annual production of around 6 million tons, valued at about \$50 million at the mine, the industry has a labour force of from 10,000 to 12,000 employees. In order to maintain production the industry requires a Federal transportation subsidy of about \$7 to \$8 million per year. It has been estimated that 120,000 people are wholly dependent upon the Nova Scotia coal industry for their support.

By contrast, 14,000 people were employed by the uranium industry early in 1959. The value of the product was more than five times that of Nova Scotia coal. Wages in the uranium industry are above the Canadian mining average. No estimate of the number of Canadians totally dependent upon the industry for their support will be made except to note that it could exceed the estimate for Nova Scotia coal because of the higher average income in the uranium industry.

INTERNATIONAL AGREEMENTS

Under the early tripartite agreement among Canada, the United States and the United Kingdom, the Eldorado mine on Great Bear Lake began producing on a large scale in 1942. In

(over)

the post-war period the Government's intensive exploration and prospecting campaign was climaxed by the Beaverlodge discovery. When private industry was encouraged to join the hunt in 1948, the country-wide search which followed was rewarded by the Blind River discovery in 1953. The government-owned Eldorado Mining and Refining Limited negotiated production contracts with the private producers for deliveries to the USAEC. These contracts covered a full five-year period prior to March 31, 1962. For a few mines the final date is March 31, 1963.

Canada has signed bilateral agreements for co-operation in the peaceful uses of atomic energy with Germany and with Switzerland. In 1959 similar agreements were under negotiation with Euratom and a contract was signed with Japan. Germany purchased several tons of uranium from Canada in 1958.

At the end of 1958 the United States had over 40 bilateral agreements in effect while Canada had 2 in effect and 2 more being negotiated. However, the American advantage is not as large as these figures seem to indicate. No less than 29 of the American bilaterals are research agreements, primarily designed to cover the export of a small research reactor and the lease of the small quantity of enriched fuel for it. The important power agreements have been signed with 13 countries but these include the major uranium-producing countries (who will not be importing uranium) and the six countries now included by Euratom. In fact, Canada has agreements, or is at present negotiating, with all the countries that are expected to develop a significant uranium requirements over the next few years.

ORE RESERVES

In 1953 the world's largest uranium deposit was shown to be in the Blind River region of Canada. The combined proved and potential ore reserves at Blind River make up more than 90 per cent of the Canadian total ore reserves; though they are slightly lower grade than some other deposits, they still contain more than 85 per cent of Canadian uranium. The next important uranium area in Canada is Beaverlodge in Northern Saskatchewan where production began in 1953. With an average of 4 pounds per ton, the ore grade here is higher than at Blind River. Three other smaller uranium areas include Bancroft in Ontario; Great Bear Lake in the North West Territories; and the Kamloops area in British Columbia.

Total reserves in Canada are conservatively estimated at 392,000 tons of U308 contained in 377 million tons of ore. Considering the fact that the incentive for further exploration disappeared after 1956, it is probable that a favourable economic situation would yield new discoveries to increase these figures substantially.

PRODUCTION

The Canadian uranium industry, now firmly established as one of our largest mining industries, reached its planned capacity of about 15,000 tons per year during the fourth quarter of 1958. Production has increased from 2,280 tons in 1956 and 6,600 tons in 1957, to 13,500 tons in 1958. The planned level will be maintained while the current contracts are being fulfilled.

SUPPLY OF ELECTRICITY

In many parts of Canada the word hydro is synonymous with electricity: well over 90 per cent of all our electricity is obtained from falling water. Water power has provided us with one of the cheapest forms of energy to be found anywhere in the world. This abundant low-cost electricity has been one of the most important factors in Canadian economic development. However, the number of rivers that can be harnessed is limited, and the distance over which it is economic to transport electricity is also limited. Thus the time is gradually approaching, and in some parts of Canada has already arrived, when other sources of power must be resorted to. The alternative method of generating electricity is, of course, by means of thermal generating stations which burn coal, oil or natural gas (or indeed any fuel) to provide heat which then creates steam to turn the turbines.

North America is fortunate in that it has been, and still is, well supplied with an abundance of low-cost energy in all of its forms, coal, oil, natural gas and water power. The fuel industries in the United States are very progressive, and are able and willing to increase output. This is particularly true of the coal industry. Canada for the first time is in the midst of an oil and natural-gas boom. However, North America consumes nearly 45 per cent of the world's supply of coal, petroleum and natural gas each year - a quantity equal to one and one-half billion tons of coal. The total continues to grow larger each year - most forecasters projecting a rate of increase of 3 per cent per year well into the future. In Canada we anticipate a rate of increase in energy consumption of over 4 per cent for the next quarter century. It is inevitable that fuel reserves will soon begin to reflect this tremendous annual drain.

NUCLEAR POWER IN CANADA

Canada stands out as an important producer of electricity, generating about 5 per cent of the world's total and having the second highest per capita consumption in the world. Most provinces are well supplied with either potential water-power sites or with lower-cost fossil fuels. However, as noted previously, certain regions - principally Southern Onta-

rio - no longer have access to undeveloped hydro sites, and fossil fuels must be transported into the area.

The current estimate of nuclear power in Canada is based principally on the future requirements of Southern Ontario. Assessing the need for power in this area in the light of Canada's nuclear-power programme leads to the conclusion that three or four large stations may be in operation by 1970. The first station, the 200 MWe CANDU is scheduled for operation in late 1964 or early 1965. There is the possibility that a few smaller stations, or one or two medium stations, may be in operation in other parts of Canada by 1970 for a total estimate of about 1,000 nuclear megawatts in Canada at that date. These will probably be heavy-water-moderated reactors and, therefore, will have a smaller uranium requirement than for other types discussed in this report.

CURRENT SUPPLY SITUATION

The Canadian mining industry has contracts for approximately 15,000 tons per year until the end of March 1962. In the following year the USAEC is committed to purchase 2,000 tons, and 5,000 tons (only the value figure, 105 million dollars has been released, but the price is probably about \$10 per pound) will go to the United Kingdom. At the present time, therefore, the industry is assured of a market in 1962 for slightly more than half current output. There is very little indication of firm sales contracts for 1963 and following years.

The Canadian uranium industry is the first among the supplying countries to face readjustment. This will come two or three years in advance of any readjustment that must be made by either the South African or American industry.

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SECURITY TRANSACTIONS

Net inflow of capital to Canada from all portfolio security transactions in the second quarter of 1959 amounted to \$126 million as compared with \$168 million in the first quarter and with \$239 million in the corresponding quarter of 1958. The total for the second quarter was made up of net sales of outstanding Canadian securities totalling \$55 million and new issues totalling \$152 million offset by retirements of \$72 million of foreign-held Canadian securities and by net purchases of \$9 million of foreign securities, mainly United States stocks and bonds.

The movement in this year's second quarter was generally similar in pattern to the preceding quarter. Among the changes of note was an increase in the proceeds of new issues of Canadian securities sold to non-residents from \$137 million to \$152 million. The total of government and municipal issues as a group was

relatively unchanged while there was a growth of \$16 million in sales of corporate securities which totalled \$41 million. The corporate total was also higher than for the final quarter of 1958 but was lower than for earlier quarters of that year.

The largest change occurred in retirements of foreign-held Canadian securities which rose from \$37 million in the first quarter to \$72 million in the second. The volume of retirements of foreign-held Canadian securities may be expected to rise as time goes on. Retirements of bonds and debentures totalled only \$140 million in the whole of 1958 or to less than 3 per cent of the debt outstanding in non-resident hands. The term of this debt would of course be generally much shorter than is implied by the current retirement ratio. The evident rising interest of Canadian investors in purchasing foreign securities is also note-worthy, although the amounts are not, at least yet, of great significance in the Canadian balance of payments.

Trade in outstanding Canadian securities has led to a smaller net capital inflow month-by-month since March when it produced \$38 million. In June, a sharp drop in net sales to non-residents of outstanding Canadian stocks from \$14 million in May to \$2 million caused a decline in the total inflow from trade in all outstanding Canadian securities from \$17 million to \$10 million. Trade in outstanding foreign securities was little changed, the net outflow of \$7 million for the purchase of foreign securities in May falling to \$5 million in June.

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ASIAN GEOLOGISTS IN CANADA

A group of 15 geologists and mining engineers from Asia and the Far East arrived in Vancouver from San Francisco on September 19 to begin a two-week tour of Canadian mines and plants.

The Study Tour, sponsored jointly by the United Nations Bureau of Technical Assistance Operations and the UN Economic Commission for Asia and the Far East (ECAFE), has been arranged to help the group to advance their knowledge of modern geological and mining techniques and equipment used in the development of mineral resources.

The 15 participants are government officials from the following 12 countries or territories: British Borneo (including North Borneo, Brunei and Sarawak), Ceylon, the Republic of China, Hong Kong, India, Indonesia, Iran, Japan, the Republic of Korea, the Federation of Malaya, the Philippines and Thailand.

The Canadian itinerary is being directed by Mr. K.J. Stewart, Head of the Information and Special Projects Section, Mineral Resources Division, Department of Mines and Technical Surveys.

GONDOLA LIFT AT BANFF

North America's first mountain gondola lift went into operation at Banff recently following a rigid nine-hour series of safety and operational tests conducted by inspectors of the Provincial Department of Industries and Labor's Factories Branch.

Prior to undertaking the inspection the Factories Branch inquired of the Government of Switzerland of their regulations governing such installations. The salient features of the Swiss laws were incorporated into new Alberta regulations.

The \$500,000 Banff lift carries passengers 4,950 feet to the top of Sulphur Mountain. The vertical rise is 2,300 feet. Travelling at 600 feet per minute, the ride takes approximately eight minutes. Each glassed-in gondola can accommodate four adults while the hourly capacity of the lift is 450 persons. It will operate daily from the beginning of May to the end of October.

Another gondola lift is under construction at Lake Louise. It will be in operation in late August or early September. It is designed to carry passengers above the treeline on Mount Whitehorn the year around.

This information is contained in the September 1 issue of "Within our Borders", an Alberta Government publication.

MANUFACTURING IN PRAIRIES

Selling value of factory shipments from all manufacturing industries in the Prairie Provinces reached an all-time high of \$1,755,125,000 in 1957, some 6.5 per cent greater than the previous peak total of \$1,648,781,000 in 1956, according to the Dominion Bureau of Statistics' annual review of the manufacturing industries in the Prairie Provinces. Number of establishments rose to 4,327 from 4,303 in 1956, employees to 94,985 from 91,149, and salary and wage payments to \$318,153,000 from \$290,384,000. Cost of materials used increased to \$1,030,040,000 from \$956,034,000, and value added by manufacture to \$694,799,000 from \$669,477,000.

For the fourth consecutive year Alberta was the leading manufacturing province in the Prairies in 1957, with factory shipments valued at \$784,480,000, some 11.6 per cent higher than 1956's total of \$703,189,000. Number of establishments declined to 1,893 from 1,971 in 1956, while employees increased to 39,089 from 36,792, salaries and wages to \$137,078,000 from \$120,195,000, cost of materials to \$461,134,000 from \$412,138,000, and value added by manufacture to \$312,037,000 from \$285,831,000.

Of the eight leading industries in Alberta, five reported gains and three losses in 1957 as compared to 1956. Factory shipments in order of size in 1957 were: slaughtering and meat packing, \$148,849,000 (\$132,087,000 in

1956); petroleum products, \$147,473,000 (\$132,335,000); butter and cheese, \$41,457,000 (\$38,224,000); flour mills, \$26,518,000 (\$32,368,000); sash, door and planing mills, \$21,140,000 (\$21,219,000); bread and other bakery products, \$19,183,000 (\$17,235,000); concrete products, \$18,455,000 (\$13,834,000); and sawmills, \$18,043,000 (\$20,503,000).

Manitoba was second in value of factory shipments, the total rising 2.6 per cent to \$664,530,000 from \$647,389,000. Number of establishments increased to 1,590 from 1,534 in 1956, employees to 43,884 from 42,821, salaries and wages to \$140,200,000 from \$133,506,000, material costs to \$379,799,000 from \$367,025,000, and value added by manufacture to \$273,163,000 from \$270,018,000. Five of the six leading industries reported greater factory shipments in 1957 compared with 1956.

Totals in order of size in Manitoba in 1957 were: slaughtering and meat packing, \$110,145,000 (\$101,466,000 in 1956); petroleum products, \$54,990,000 (\$53,942,000); railway rolling stock, \$34,234,000 (\$33,662,000); butter and cheese, \$29,684,000 (\$28,015,000); men's factory clothing, \$24,452,000 (\$23,361,000); and flour mills, \$20,262,000 (\$25,142,000).

Value of factory shipments in Saskatchewan rose 2.7 per cent in 1957 to \$306,115,000 from \$298,203,000 in the preceding year. Number of establishments increased to 844 from 798, employees to 12,012 from 11,536, salaries and wages to \$40,875,000 from \$36,683,000, material costs to \$189,107,000 from \$176,871,000, and value added by manufacture decreased to \$109,599,000 from \$113,628,000.

Three of the four leading industries in Saskatchewan had larger factory shipments in 1957 as compared to the preceding year. Totals in order of size in 1957 were: petroleum products, \$89,580,000 (\$86,090,000 in 1956); flour mills, \$39,194,000 (\$42,063,000); slaughtering and meat packing, \$38,709,000 (\$31,334,000); and butter and cheese, \$29,836,000 (\$28,017,000).

BEAVERBROOK ART GALLERY

The Lord Beaverbrook Art Gallery, the magnificent gift of the British financier and publisher to the province of New Brunswick, where he spent his boyhood, was opened on September 16 in the old city of Fredericton.

Situated on the banks of the St. John River, the gallery was opened in the presence of some 200 especially invited guests, from various parts of Canada, Great Britain and the United States. Lord Beaverbrook himself acted as chairman of the ceremonies. Forty-eight dozen roses had been flown from Great Britain for the occasion, a gift to Lord Beaverbrook from the British Rose Society.

The Gallery houses some 300 paintings, including old masters, abstractionists and impressionists, collected by the donor.

STATEMENT ON OUTER SPACE

The Prime Minister, Mr. John G. Diefenbaker, has issued the following statement:

"The Canadian Ambassador in Moscow has been asked to deliver to the Soviet Government the following message addressed to Mr. Khrushchev in his capacity as Chairman of the Council of Ministers:

'Please convey to all those whose efforts contributed to the scientific achievement of sending a rocket to the moon the congratulations of the Canadian Government and people.'

Signed: John G. Diefenbaker,
Prime Minister of Canada.

"It is a major achievement in the technical progress of mankind for a space vehicle to have travelled from the earth to another celestial body and emphasizes the urgent importance of international agreement on the peaceful use of outer space.

"Canada's interest in this problem is shown by its membership on the UN ad hoc Committee on the peaceful use of outer space and by the Canadian Government's repeated insistence that the disarmament aspect of outer space should be treated as a matter of urgency.

"As long ago as August 1957, when the Soviet Union first reported the successful flight of an intercontinental ballistic missile, I called for redoubled efforts on the part of all governments engaged in the negotiations of disarmament. The nations concerned should now do their utmost to prevent undesirable national rivalries from extending to outer space. Canada is ready to join with other nations in ensuring that the technical possibilities that are opening up should not be used for threatening or belligerent purposes, but rather should be employed through international co-operation for the benefit of mankind."

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TRIBUTE TO MR. MASSEY

At a farewell dinner given by the Government of Canada in honour of Mr. Vincent Massey, who retired on September 15 as Governor-General of Canada, Prime Minister Diefenbaker paid the following tribute to him:

"We are here for the purpose of giving a public expression of thanks and appreciation to Mr. Vincent Massey who, as the 18th Governor-General of Canada, as personal representative of the Sovereign, has brought singular distinction to the office, and by his outstanding service has made a permanent imprint on Canada and Canadians....

"Before being appointed Governor General, Mr. Massey had held more positions of distinction than any other Canadian, and the versatility of his personal accomplishments in such diverse fields as diplomacy, politics, education, business and the arts has been surpassed

by none: In diplomacy, as Canada's first Minister to the United States and for many years Canada's High Commissioner in the United Kingdom; in political life, as a member of the Privy Council of Canada and of the Imperial Privy Council; in business, as head of one of the largest Canadian corporations; in education, as lecturer in history, Dean of Residence, and Chancellor of the University of Toronto; in the arts, as Chairman of the Board of Trustees of the National Gallery of Canada, Chairman of the Massey Commission, and author of four books."

Speaking directly to the Governor-General, Mr. Diefenbaker continued:

"On behalf of the people of Canada, I thank you for your lifetime of service which is the embodiment of the words of John Donne, written three centuries ago, which have been quoted by you on occasion:

'No man is an island entire of itself.'

"Knowing Canada as no one else does, having travelled everywhere including the polar areas, Your Excellency's relations with the Canadian people cannot be described more accurately and touchingly than in the words used by M. Francis Lacoste, the French Ambassador, last Saturday on the occasion of the presentation on behalf of the Diplomatic Corps:

'Never has there been a school too far away -- a hospital corridor too long -- never anyone too young or too sick or too old not to deserve your presence, your smile, your proffered hand, a comforting word from you'.

"Your Excellency has lived in, and practised, the spirit of devoted service. You have performed well and adomed the position of Governor-General, and in doing so the Sovereign and Canada have never been better served...."

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NEW BOND ISSUE

Mr. Donald M. Fleming, Minister of Finance, has announced plans for the refunding of \$550 million Government of Canada 3 per cent Bonds maturing October 1, 1959. The refunding includes a new public offering of \$325 million of Government of Canada Bonds and Treasury Bills. In addition the Government has arranged for the sale to Bank of Canada of \$225 million of Bonds and Treasury Bills in exchange for the Bank's approximately equal holding of the maturing 3 per cent Bonds.

The new issue will be dated October 1, 1959, and offers investors the following choice:-

- (1) 5.5 per cent 3 year bonds due October 1, 1962, offering price 97.75 per cent to yield the investor about 6.33 per cent per annum for 3 years. This bond may be exchanged at the option of the holder on or before June 30, 1962 into an equal par value of 5½ per cent

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non-callable bonds due October 1, 1975 to yield about 5.72 per cent per annum for 16 years.

(2) 5.5 per cent 1 year bonds due October 1, 1960, offering price 99.00 per cent to yield the investor about 6.55 per cent for one year. This bond may be exchanged at the option of the holder, on or before June 30, 1960 into an equal par value of 5½ per cent non-callable bonds due October 1, 1975 to yield about 5.60 per cent per annum for 16 years.

(3) 3 per cent 1 year 7 month non-callable bonds due May 1, 1961, offering price 94.65 per cent to yield about 6.61 per cent per annum to maturity. The 3 per cent bonds are an addition to \$400 million of 3 per cent bonds due May 1, 1961, dated May 1, 1958 and presently outstanding.

The new Bonds have been offered to investors across Canada through investment dealers and chartered banks.

This offering of \$325 million of new securities is in addition to \$50 million of 5½ per cent Bonds due October 1, 1962; \$50 million of 5½ per cent Bonds due October 1, 1960; \$90 million of 3 per cent Bonds due May 1, 1961 which the Bank of Canada has agreed to acquire on October 1, 1959. Bank of Canada's purchase of the \$35 million of 253 day Treasury Bills will be at the average price of accepted tenders from dealers and banks.

The issue has been heavily over-subscribed and is now selling at a premium.

FINAL P.E.I. ELECTION RESULTS

The final figures of the provincial election held in Prince Edward Island on September 1 are as follows:

Progressive Conservatives	23
Liberals	7
	30

EMPLOYMENT SITUATION

The employment situation continued to improve through June. The seasonally-adjusted composite index for the month was 120.1 (1949=100), up 0.7 per cent from May. More-than-seasonal increases in employment indexes for forestry, durable goods manufacturing and construction were the main factors in the rise in the adjusted composite index. The index increased by 1.4 per cent from January to June, but the figure for the latter month was 3.3 per cent below the peak reached in July 1957.

Seasonal influences occasioned greater changes than non-seasonal factors between May and June, and the unadjusted composite index rose 3.1 per cent between the two months from 119.6 to 123.3. Employment increases were recorded for all industry divisions.

The industrial composite index of average weekly wages and salaries for June was \$73.71,

down 11¢ from May. Seasonal influences contributed to the decline. The June 1959 payroll index was 212.4, up 6.0 per cent from the figure for June 1958. Over the year, average weekly wages and salaries were up 4.3 per cent and industrial employment increased 1.6 per cent.

Unadjusted employment indexes for June are as follows by provinces: Newfoundland, 135.7 (133.4 for June 1958); Prince Edward Island, 133.3 (117.8); Nova Scotia, 97.8 (97.0); New Brunswick, 103.8 (100.2); Quebec, 121.6 (120.4); Ontario, 124.1 (122.5); Manitoba, 115.5 (112.0); Saskatchewan, 138.0 (133.8); Alberta, including Northwest Territories, 161.3 (155.5); and British Columbia, including Yukon, 121.4 (118.0).

Provincial averages of average weekly wages and salaries for June: Newfoundland, \$64.88 (\$62.28 for June last year); Prince Edward Island, \$54.00 (\$52.11); Nova Scotia, \$59.54 (\$59.13); New Brunswick, \$59.39 (\$56.82); Quebec, \$70.41 (\$67.29); Ontario, \$76.94 (\$73.96); Manitoba, \$71.22 (\$67.87); Saskatchewan, \$70.24 (\$68.99); Alberta, including Northwest Territories, \$75.32 (\$73.32); and British Columbia, including Yukon, \$80.44 (\$75.51).

NEW BRIDGE ON YUKON

Traffic along the 350-mile highway between Whitehorse and Dawson City in the Yukon Territory will be no longer delayed at the Yukon River crossing at Carmacks. A new 720-foot steel bridge now spans the Yukon River eliminating the ice bridge that was used in winter and the ferry that operated during the summer.

The Carmacks Bridge, which was officially opened recently by Mr. F.H. Collins, Commissioner of the Yukon Territory, is one of three bridges at river crossings along the route of the Whitehorse-Dawson road. The other two bridges, spanning the Pelly and Stewart Rivers, are being constructed and are expected to be completed in 1960. When all bridges are in operation the costly transportation tie-ups brought about by the changes from ice bridge to ferry in the spring and from ferry to ice bridge in the autumn will be ended.

The \$846,000 bridge at Carmacks was built by the Department of Northern Affairs and National Resources. It consists of two 100-foot steel pony truss spans and two 260-foot through-truss spans resting on concrete piers in the river. The roadway is 24 feet wide and has two-foot safety walks on the sides for pedestrians.

Completion of the bridges on the Whitehorse-Dawson road will improve transportation and communications into the promising Peel Plateau-Eagle Plain oil and gas area where an encouraging oil and gas discovery was made recently, and aid the movement of silver-lead zinc ore from the Mayo-Keno mining district.