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Projet de modification des installations de
stockage des déchets radioactifs et
réfection de Gentilly-2

Bécancour

6212-02-005

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Le 26 janvier, 2005

Objet : Réponse à l'estimation faite par le gouvernement du Canada des subventions totales à Énergie atomique du Canada limitée

Messieurs les commissaires,

J'ai constaté qu'Élise Godin de Ressources naturelles Canada a répondu à votre demande concernant « le montant cumulant le budget d'Énergie atomique du Canada limitée depuis sa création ». Elle a affirmé que « le gouvernement fédéral a alloué environ 7 milliards de dollars à Énergie atomique du Canada limitée, depuis sa création, pour effectuer principalement des travaux de recherche et de développement ».

Pour mémoire, il faut mentionner que le montant dont parle Mme Godin à propos des subventions totales à EACL est exprimé en dollars non indexés ou « dollars de l'année ». Je soumettrais que, depuis 50 ans, la gestion comptable des subventions de EACL en dollars de l'année plutôt qu'en dollars ajustés selon l'inflation déforme la compréhension des subventions cumulatives totales à l'industrie nucléaire. La pratique courante du vérificateur général du Canada et de l'OCDE est d'exprimer de tels chiffres en dollars constants ajustés selon l'inflation. Cela permet à la population de faire une évaluation significative des coûts par rapport au dollar actuel et à son pouvoir d'achat approximatif.

Cela dit, j'ai joint un extrait d'un rapport de la Campagne sortir du nucléaire détaillant les subventions totales accordées à EACL. Le tableau 1 montre que les subventions totales à EACL depuis sa création en 1953 jusqu'en 2001 s'élèvent à 17,5 milliards de dollars (en dollars de 2001). Veuillez noter que le tableau présente également le montant de la subvention en dollars de l'année. Depuis la rédaction de ce rapport, le gouvernement fédéral a accordé des subventions additionnelles à EACL de 144,6 millions de dollars en 2002, 178,8 millions en 2003 et 163,8 millions en 2004.

Je vous remercie de m'avoir donné l'occasion d'apporter cette précision et je vous prie d'accepter l'expression de mes sentiments distingués.

Shawn Patrick Stensil
Directeur, Atmosphère et Énergie

1. Government Subsidies to AECL

Atomic Energy of Canada Limited (AECL) is a federal crown corporation that designs and markets CANDU reactors, and conducts other nuclear-related activities. AECL receives its taxpayer subsidy (known as a ‘parliamentary appropriation’) through Natural Resources Canada, and reports to the Minister of Natural Resources.

Along with MAD Magazine and Sugar Frosted Flakes, AECL celebrated its 50th Anniversary in 2002. It is ironic that AECL also reached an unprecedented peak of taxpayer subsidies in that year, topping \$17 billion for the first time in history. As shown in Table 1, government subsidies to AECL from 1953 to 2002[1] total \$17.5 billion (\$2001). Subsidies at the end of the 2001 fiscal year totaled \$16.987 billion (\$2000).

This is a real cash subsidy to AECL, with the figures taken from AECL’s own annual reports. The subsidy is calculated in 2001 dollars based on the Gross Domestic Price Index (see Note 20 to Table 1). Conversion to 2001 dollars gives an accurate picture of the real historic value of the subsidies that have been given to AECL by the federal government over the last 50 years. AECL prefers to distort the historic reality by totaling its subsidies in nominal, as-spent dollars (also known as dollars-of-the-year).

In 1993, AECL released a commissioned study of historic government subsidies that it had received. The study, done by the consulting firm of Ernst & Young, was entitled *The Economic Effects of the Canadian Nuclear Industry*, October 1993. At that time, Ernest & Young reported total subsidies to AECL for the years 1952-53 to 1992-93 of \$4.754 billion (nominal dollars, or ‘dollars-of-the-year’). To get this figure, Ernst & Young offset several billion dollars of additional subsidies by assuming that the federal treasury would be ‘rewarded’ by the sale of ‘assets’ such as the heavy water inventory. This has not happened.

Because of the inaccuracies and misrepresentations in the Ernst & Young study, in February 1996 the Campaign for Nuclear Phaseout (CNP) released a study entitled *Nuclear Sunset: The Economic Costs of the Canadian Nuclear Industry*, by David H. Martin and David Argue. The study looked at a variety of issues including government subsidies and nuclear industry employment. AECL subsidies for the years 1952 to 1995 totaled \$12.919 billion (\$1995).

The Campaign for Nuclear Phaseout subsequently published several updates:

- *Nuclear Budget Watch 1997*, February 1997, by David H. Martin and David Argue
AECL subsidies for the years 1952 to 1997 totaled \$15.2 billion (\$1997).
- *Federal Nuclear Subsidies: Time to Call a Halt*, November 1998, by David H. Martin
AECL subsidies for the years 1952 to 1998 totaled \$15.8 billion (\$1998)
- *Financial Meltdown: Federal Nuclear Subsidies to AECL*, November 2000, by David H. Martin
AECL subsidies for the years 1952 to 2000 totaled \$16.6 billion (\$2000)

1. In the table and throughout this report, we use the end-year of the fiscal years 1952-1953 to 2001-2002, ending on March 31st.

In an attempt to manipulate the public perception of massive nuclear subsidies, Natural Resources Canada (the department of the Canadian government responsible for AECL, nuclear energy and uranium mining) funded a study in 1998 entitled *Nuclear Energy Policy in Canada 1942 to 1997*. The study was written for the Carleton Research Unit on Innovation Science and Environment (CRUISE) by Robert Morrison, former Director of the Nuclear Energy Division at Natural Resources Canada. Morrison's study included tables of government subsidies to AECL from 1953 to 1997, which virtually duplicated the 1953-1993 table produced by Ernst & Young in its 1993 study *The Economic Effects of the Canadian Nuclear Industry*. Morrison then added on subsidies from 1994 to 1997. Morrison reported total subsidies to AECL from 1953 to 1997 of \$5.480 billion (nominal, as-spent dollars, or 'dollars-of-the-year').

Table 1 Federal Government Subsidies to AECL (\$ millions)

Fiscal End Year	< R&D >	<	REACTORS					>>	HEAVY WATER					>>	FINANCIAL			\$2001	
	R&D	Prototype Reactor Funding [2]	Pickering Pay-back	CANDU 3	Slowpoke	Decommiss'n'g [5]	Loans Forgiven	Loans Payment [8]	HWP Support [11]	LaPrade [5] Maintenance	HWP [5] Closures	Dividends/ Guarantees/ Investments	Additional Subsidies	Subsidiaries Divested	Nominal TOTAL	Equivalent TOTAL			
1953	21.4	-	-	-	-	-	-	-	-	-	44.7 [13]	-	-	66.1	428.3				
1954	19.6	-	-	-	-	-	-	-	-	-	-	-	-	19.6	125.4				
1955	29.5	-	-	-	-	-	-	-	-	-	-	-	-	29.5	188.7				
1956	30.3	-	-	-	-	-	-	-	-	-	-	-	-	30.3	190.5				
1957	30.5	0.5	-	-	-	-	-	-	-	-	-	-	-	31.0	189.3				
1958	23.8	0.8	-	-	-	-	-	-	-	-	-	-	-	24.6	146.0				
1959	26.6	2.1	-	-	-	-	-	-	-	-	-	-	-	28.7	168.3				
1960	24.7	5.8	-	-	-	-	-	-	-	-	-	-	-	30.5	177.4				
1961	26.5	11.7	-	-	-	-	-	-	-	-	-	-	-	38.2	220.5				
1962	29.1	4.8	-	-	-	-	-	-	-	-	-	-	-	33.9	193.4				
1963	37.1	-	-	-	-	-	-	-	-	-	-	-	-	37.1	206.8				
1964	44.9	-	-	-	-	-	-	-	-	-	-	-	-	44.9	246.6				
1965	45.2	-	-	-	-	-	-	-	-	-	-	-	-	45.2	242.8				
1966	52.7	-	-	-	-	-	-	-	-	-	-	-	-	52.7	273.2				
1967	58.0	-	-	-	-	-	-	-	-	-	-	-	-	58.0	288.5				
1968	66.5	-	-	-	-	-	-	-	-	-	-	-	-	66.5	316.9				
1969	68.6	-	-	-	-	-	-	-	-	-	-	-	-	68.6	313.8				
1970	69.0	-	-	-	-	-	-	-	-	-	-	-	-	69.0	305.2				
1971	68.9	-	-	-	-	-	-	-	-	-	-	-	-	68.9	297.7				
1972	77.0	-	-	-	-	-	-	-	-	-	-	-	-	77.0	318.7				
1973	78.2	-	-	-	-	-	-	-	-	-	-	-	-	78.2	304.0				
1974	87.9	-	-	-	-	-	-	-	-	-	-	-	-	87.9	309.9				
1975	85.9	-	-	-	-	-	-	-	-	-	-	-	-	85.9	273.5				
1976	93.6	-	-	-	-	-	-	-	-	-	-	-	-	93.6	277.7				
1977	96.8	85.5	-	-	-	-	-	13.3	-	-	-	-	-	195.6	541.2				
1978	101.7	275.4 [3]	0.0 [4]	-	-	-	-	26.8	-	-	-	-	-	403.9	1,037.8				
1979	110.3	8.9	0.0 [4]	-	-	-	-	-	-	-	-	-	-	119.2	282.2				
1980	114.7	8.8	0.0 [4]	-	-	-	-	-	-	-	-	-	-	123.5	266.0				
1981	123.1	10.2	0.0 [4]	-	-	-	816.9 [7]	9.3 [9]	65.0	8.6	-	-	-	1,033.1	2,000.5				
1982	145.7	11.4	0.0 [4]	-	-	-	-	9.3	112.9	4.5	-	-	-	283.8	498.6				
1983	169.9	12.7	0.0 [4]	-	-	-	-	11.3	118.3	3.1	-	-	-	315.3	521.0				
1984	184.5	12.4	0.0 [4]	-	-	-	-	12.3	124.7	2.5	-	-	-	336.4	534.9				
1985	192.4	11.1	-	-	2.6	-	-	12.3	104.6	2.5	-	-	-	325.5	499.4				
1986	172.7	-	-	-	3.9	18.3	-	13.3	29.2	2.3	35.4	-	-	275.1	406.5				
1987	176.8	-	-	-	4.9	11.9	-	3.3 [10]	-	1.9	18.8	-	-	217.6	309.1				
1988	143.3	-	-	-	10.4	20.3 [6]	-	3.3 [10]	0.0 [12]	0.5	2.6	0.0 [14]	-	180.4	247.1				
1989	135.9	-	-	44.4	11.1	10.3 [6]	-	4.5 [10]	0.0 [12]	-	-	-	-	206.2	269.6				
1990	141.5	-	-	29.2	12.2	12.0 [6]	-	1.6 [10]	0.0 [12]	-	-	-	9.1	205.6	257.6				
1991	154.3	-	-	-	-	11.4 [6]	-	1.8 [10]	0.0 [12]	-	-	-	-	167.5	200.4				
1992	162.1	-	-	-	-	11.9 [6]	-	1.9 [10]	0.0 [12]	-	-	0.0 [14]	-	175.9	207.7				
1993	167.3	-	-	-	-	10.9	-	2.1 [10]	0.0 [12]	-	-	-	-	180.3	209.4				
1994	161.5	-	-	-	-	9.8	-	2.3 [10]	0.0 [12]	-	-	-	-	173.6	197.7				
1995	169.5	-	-	-	-	10.5	-	-	-	-	-	-	-	180.0	201.7				
1996	164.3	-	-	-	-	10.3	-	-	-	-	-	-	-	174.6	193.0				
1997	167.4	-	-	-	-	-	-	-	-	-	-	1,500.0 [15]	19.9 [16]	1,687.3	1,828.5				
1998	132.2 [1]	-	-	-	-	-	-	-	-	-	-	20.6 [17]	-	152.8	163.3				
1999	102.4	-	-	-	-	-	-	-	-	-	-	8.0 [18]	-	110.4	116.1				
2000	105.7	-	-	-	-	-	-	-	-	-	-	32.1 [19]	-	137.8	142.3				
2001	108.9	-	-	-	-	13.0	-	-	-	-	-	-	-	121.9	123.9				
2002	134.2	-	-	-	-	17.0	-	-	-	-	-	-	60.0	211.2	211.2				
TOTAL	4,934.6	462.1	0.0	73.6	45.1	167.6	816.9	88.6	594.8	25.9	56.8	1,544.7	140.6	9.1	8,960.3	17,469.9 [20]			

Notes to Table 1: Federal Government Subsidies to AECL

Some of the following notes refer to the Ernst & Young (E&Y), and Morrison studies cited in the text above. AECL has never directly challenged or refuted any of the subsidy tables published by the Campaign for Nuclear Phaseout.

- [1] In 1998, AECL reported Research and Development funding of 142.386, but in 1999 changed it retroactively to \$132.215 (*AECL Annual Report 1998-1999*, p. 44). See also Note 17 below.
- [2] Subsidies from 1957 to 1962 were for the NPD reactor. Subsidies from 1977 to 1985 were for the Douglas Point and Gentilly-1 reactors.
- [3] Includes non-cash contribution of \$124.1 million respecting accrued interest on loans used to finance the prototype nuclear power reactors.
- [4] Ernst & Young (E&Y) and Morrison assumed an “offset expenditures” principle concerning the Pickering payback agreement from 1977 to 1983 which totals \$195.6 million. In other words, E&Y assumed that these payments from Ontario Hydro offset Federal Government funding that would have been available, if not for the Pickering payback agreement. This is not an appropriate assumption. In 1993, Ontario Hydro wrote off \$410 million in amounts owed under this agreement from AECL and the Government of Ontario. This negative payback was accrued as a result of the poor performance of Pickering Units 1 and 2, particularly between 1984 and 1987.
- [5] E&Y and Morrison combined LaPrade Heavy Water Plant (HWP) Maintenance with HWP Closures and Decommissioning under the column “Plant Closure/Safekeeping” (E&Y) and “Decommissioning” (Morrison). They also placed decommissioning figures from 1986 and 1987 under “NPR [Nuclear Power Reactor] /Funding”. This table has listed figures separately for Reactor Decommissioning, LaPrade Maintenance, and HWP Closures — as they were reported annually by AECL. Reactor Decommissioning includes subsidies for the closing of Gentilly-1, NPD, Douglas Point, WR-1, and NRX.
- [6] Lower figures were included in the E&Y and Morrison tables, although figures used in this table are clearly identified in AECL annual reports.
- [7] Due to the inadequacy of future sales of heavy water, Parliament forgave Heavy Water Plant (HWP) loans and interest effective April 1, 1980 for the LaPrade, Glace Bay and Port Hawkesbury HWPs, in the amount of \$816.948 million. E&Y and Morrison reported costs of \$672.2 million directly and non-cash costs of \$157.4 million, but only included \$672.2 million in their tables of subsidies.
- [8] Payments to the Province of Nova Scotia for purchase of the Glace Bay Heavy Water Plant.
- [9] Review of AECL annual reports for this table reveals that E&Y and Morrison missed a taxpayer contribution of \$9.3 million in fiscal year 1980-81.
- [10] E&Y and Morrison overstated the value of “Loans Payment Support” from fiscal year 1989-1990 to fiscal year 1992-1993. Morrison also overstated the value in 1993-1994. These values were corrected in this table for the actual amounts included in AECL annual reports.

- [11] The federal government provided subsidies to cover the on-going operating losses of the heavy water plants in operation.
- [12] E&Y and Morrison assumed an “offset expenditures” principle concerning Heavy Water Production support. This was not an appropriate assumption. E&Y’s valuation of the heavy water inventory as having a book value of \$522.5 million at the end of fiscal year 1993, and Morrison’s valuation of \$520.1 million at the end of 1996, both assumed that the federal government could actually realize this value. This assumption has proven false. A non-cash contribution for the interest accruing on AECL production support should be calculated in order to fully describe taxpayer costs, and would likely exceed \$50 million per year, but would require further information to confirm. In order not to overstate the taxpayer cost, this study assumes that these costs are zero. In 1996, AECL confirmed that an agreement had been reached with the Government, to “release the corporation from its obligation to repay parliamentary appropriations” (*AECL Annual Report 1995-1996*, p. 31). E&Y and Morrison assumed that the Government would indeed be repaid, in estimating the extent of Government support for AECL. The so-called Treasury Board Agreement, effective 1996-1997 directs AECL to hold the proceeds of heavy water sales or leases for use in decommissioning activities for ten years. This arrangement may be renewed after 2006 (*AECL Annual Report 1996-1997*, p. 33).
- [13] As noted in the *AECL Annual Report 1953-54*, nominal values of \$1.00 each were assigned in AECL’s Balance Sheet to (1) research goods having a book value of \$3,352,239; and (2) land, buildings and equipment having a book value of \$41,357,693. As the Auditor General’s Office noted at the time, “Since these constitute the essential stock in trade and equipment for the continuing research and development program of the Company [AECL], the nominal values shown may not be regarded as representing a true and fair view.” In order to accurately reflect total subsidies to AECL, a total of \$44.7 million was added to the 1953 fiscal year in this table.
- [14] In 1988, AECL sold Nordion International Inc. (formerly the AECL division known as the Radiochemical Company) to the Canada Development Investment Corporation (CDIC) for eventual privatization. In 1991, CDIC sold Nordion to MDS Health Group Ltd. for \$165 million, and it was reported that AECL received \$150.5 million from CDIC, and that this, “together with interest earned thereon between the dates of receipt and disbursement, has been distributed to the Shareholder by way of dividends” (*AECL Annual Report 1991-1992*, p. 12). E&Y and Morrison noted a \$152.5 million dividend in 1992 from the Nordion sale. The sale resulted in lengthy litigation by MDS and Nordion, with AECL, CDIC and the Attorney General of Canada named as liable parties. An out-of-court settlement was announced in July 1996, involving a payment of \$5 million by the government, an interest-free loan of \$100 million from the government to MDS/Nordion, and an additional payment of \$12.5 million to MDS/Nordion by AECL. However, details including the total project cost, loan terms, long-term liability for waste management and decommissioning, and other terms of the settlement have not been disclosed. For these reasons, even if funds were advanced to the Receiver General, the amounts advanced will not offset liabilities.
- [15] In support of AECL's exporting efforts to China, the Federal Government has assumed a guarantee liability for \$1.5 billion. Since this sale could not be financed through conventional financing sources, it represents the largest single taxpayer funded obligation ever provided to AECL by the government. This guarantee is similar in nature to loan guarantees and financing

support provided for heavy water production in the amount of \$816.9 million, which the government forgave, effective in 1980-81.

- [16] In 1997, AECL reported a \$30.039 million parliamentary appropriation for “Program Review”, also referred to as “Restructuring Costs”, for downsizing costs resulting from the government’s 1995 Program Review. Morrison reported a “Program Review” subsidy of \$30 million. However, in 1998, AECL changed that amount retroactively for 1997 to \$19.9 million, which was explained as “pass-through of the government’s contribution towards phasing out their investment in the Fusion Program” (*AECL Annual Report 1997-1998*, p. 36).
- [17] In 1998, AECL included “termination costs” of \$10.400 million in its parliamentary appropriations (*AECL Annual Report 1997-1998*, p. 36). In 1999, another item was added retroactively in the amount of \$10.171 million for “Whiteshell commercialization” (*AECL Annual Report 1998-1999*, p. 44). These two items have been combined under the heading “Additional subsidies” for the year 1998.
- [18] In 1999, AECL included \$8.0 million in its parliamentary appropriations for “Year 2000” expenses, described as “...part of the government’s program to assist crowns and departments in defraying Year 2000 costs” (*AECL Annual Report 1998-1999*, p. 44).
- [19] In 2000, AECL reported \$24.5 million for “Year 2000” expenses and \$15.6 million for “Termination costs” in its parliamentary appropriations. No detailed explanation was offered for the Termination costs appropriation, other than to say that it represents “...the release of a previously frozen allotment by the government to cover termination costs incurred during the Program Review implementation period” (*AECL Annual Report 1999-2000*, p. 44). In addition, the \$8.0 million appropriation in 1999 for “Year 2000” is treated as an “advance” which is recorded in 2000 as a “reduction” of appropriations. This table records a net appropriation for these items in the amount of \$32.1 million under the heading “Additional subsidies” for the year 2000.
- [20] Based on the Gross Domestic Product Price Index. This index was chosen because it is an historically consistent set of data available back to 1952-53. Since this index is a composite of economic activity and pricing, it generally converts nominal to real values at rates less than the rate of inflation.