

Chapter 1

Background Information

Mr. Chairman, our research program is clearly recognized by international scientists as being world class. I believe our approach could well serve as a model for society in dealing with other kinds of toxic waste, and that many aspects of our technology can be applied to these other wastes.

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A Profile of the Nuclear Power Industry in Canada

Acknowledged to be one of the best reactors in the world, the CANDU (an acronym for *CAN*ada *D*euterium *U*ranium) passed the test beginning in 1962 with the commissioning of a small 25-megawatt (MW) test generating station (Nuclear Power Demonstration, or NPD) in Rolphton, Ontario. Following this successful experiment, Canada developed a first generation of 200 MW generators with the commissioning of the Douglas Point Nuclear Generating Station on Lake Huron in 1966 (closed down in 1984): reactors of this generation were sold to India and Pakistan. The power of commercial reactors increased subsequently, and Ontario Hydro, *Hydro-Québec* and the New Brunswick Electric Power Commission in turn acquired CANDUs,⁽⁷⁾ so that by March 1987 Canada had 18 operating nuclear power plants, of which 16 were in Ontario (see Table 1). It should be noted, that once Ontario's Darlington plant becomes operational, the nuclear industry will be providing 62% of that province's electricity.⁽⁸⁾

Although the CANDU is being used in five other countries (Argentina, South Korea, India, Rumania and Pakistan), its commercial success outside of Canada is not necessarily assured. Currently, a large part of the foreign market lies with developing countries, which have difficulty financing the capital cost of a nuclear installation. Given this economic reality, Atomic Energy of Canada Ltd. has had to adjust its sights, and it has developed a new, smaller reactor, the CANDU 300, with a capacity of from 380 to 400 MW depending on water cooling temperatures. Its short construction schedule, low operating cost and flexibility should prove attractive to utilities with limited financial resources.⁽⁹⁾

⁽⁷⁾ Atomic Energy of Canada Ltd. "CANDU leads the world in performance", *Aspects*, Vol. 5, No. 4, 1985, p. 14.

⁽⁸⁾ House of Commons, Standing Committee on Environment and Forestry, *Minutes of Proceedings and Evidence*; the Hon. Marcel Masse, Minister of Energy, Mines and Resources, Issue No. 14, April 1, 1987, p. 7. (Henceforth references to evidence heard before the Committee will comprise only the witness's name and the information that follows it).

⁽⁹⁾ Mac Keillor, "Satisfying Market Demand: CANDU 300, A New Reactor from Canada", *Aspects*, Vol. 6, No. 4, 1987, p. 11-14.