

**Table 4**

**Proportion of Constituent Elements in  
one Kilogram of CANDU Spent Fuel**

Constituent Elements	Fresh Fuel		Spent Fuel	
	(grams)	(%)	(grams)	(%)
Uranium 238	993	99.3	984	98.4
Uranium 235	7	0.7	2	0.2
Actinides	—	—	5	0.5
Fission Products	—	—	9	0.9
<b>TOTAL</b>	<b>1,000</b>	<b>100</b>	<b>1,000</b>	<b>100</b>

Source: Ontario, Royal Commission on Electric Power Planning (Arthur Porter, President), *A Race Against Time: Interim Report on Nuclear Power in Ontario*, 1978, p. 88.

(AECL) has been put in charge of research and development in the area of safe immobilization and disposal of fuel wastes, while regulation of all aspects of nuclear energy in Canada, including waste management, is the responsibility of the Atomic Energy Control Board. The AECB recently published a policy statement outlining its long-term regulatory objectives, requirements and guidelines for disposal of radioactive wastes (see Appendix B). That statement explains that the objectives of radioactive waste disposal are to:

- i) minimize any burden on future generations;
- ii) protect the environment; and
- iii) protect human health,

while taking social and economic factors into account.<sup>(24)</sup>

The Committee is concerned by the interpretation that might be given to the somewhat timid notions of “minimizing” and “protecting,” in the context of social and economic factors whose nature and relative importance are not yet very well defined. The Committee is especially troubled by the uncertainty that still exists over the biological effects of low-level doses of radiation. In the view of certain members of the scientific community, doubts must be cast on “acceptable” radiation thresholds, because the toxicity of radiation may hitherto have been consistently underestimated.<sup>(25)</sup> Obviously, a position such as this could have considerable influence on the perception of the risk involved in the use of nuclear fuel.

The perception of a risk is based not only on emotion and feelings but also on cognition. The reliability a person attributes to available information is an important element in his or her thought process on the matter. Thus the question of the motivation, credibility and competence of the research and regulatory bodies involved in radiological production

<sup>(24)</sup> Atomic Energy Control Board (1987), p. 2.

<sup>(25)</sup> Pierre Baron, “Les normes actuelles sont fausses,” *Science et Avenir*, No. 487, September 1987, p. 79-84.