

Recognizing the value and relevance of the comments by the INPUT spokespersons, the Committee recommends that:

#### Recommendation 4

**The Atomic Energy Control Board should fund an independent scientific assessment of the computer models used to verify the Canadian high-level radioactive waste disposal concept.**

It is now recognized that spent fuel can be disposed of without any additional processing. In addition, the development of containers with metal (titanium or copper) exteriors ensures against leaks for at least 500 years. Field research in this area is being carried out in the Atikokan and East Bull Lake regions of Northern Ontario, and in the Whiteshell region of southern Manitoba.

Excavations at the Whiteshell Underground Research Laboratory include vertical access and ventilation shafts 255 metres deep, and a laboratory room 240 metres below the earth's surface. Preparations are currently underway to extend the access shafts to 455 metres, under an agreement signed with the U.S. Department of Energy.

The concept assessment phase, which includes generic research on geological disposal, is critical to the waste management program. The key to assessing the effectiveness and safety of any high-level radioactive waste disposal facility lies in the capability to predict with certainty the nature and effect of geological processes and events. According to Gordon Edwards, of the Canadian Coalition for Nuclear Responsibility, mathematical models simulating the movement of buried waste are based on knowledge of geology, which is a descriptive and not a predictive science. Moreover, Dr. Edwards argues that we in fact do not know how to "dispose" of anything: all we know how to do is store it. He concludes that the Achilles heel of the entire idea of deep geological disposal lies in the impossibility of refilling the shaft that has been drilled in such a way that the drilled rock regains the integrity which it had as solid rock.<sup>(61)</sup>

Echoing Dr. Edwards' concerns, Carole Duyf of the Concerned Citizens of Manitoba Inc., attacked the scope and focus of AECL's Underground Research Laboratory at Pinawa, and argued that "The presence of the Lac du Bonnet hole proves only one thing: that AECL is capable of creating a hole in the rock".<sup>(62)</sup> Speaking for the same organization, Donovan Timmers argued that it is utterly immoral to place the risk of a repository failure on the shoulders of future generations.<sup>(63)</sup> Norman Rubin of Energy Probe considers that since we can neither determine nor predict what nuclear wastes will do underground, it would be a serious mistake to bury them deep in a geological formation. Furthermore, since the scientific community cannot guarantee the future integrity of a waste burial site, it is up to the population as a whole to make a decision, based on scientific models and opinions. Mr. Rubin believes that once the Canadian people have been informed about the latest predictions and unknowns, they will opt for storing existing wastes on the surface for another generation or two.<sup>(64)</sup> This view is shared by Gordon Edwards, who

If we keep [the waste] safely on the surface and carefully monitored, there is no reason to think that in coming decades, perhaps in 30 or 40 years, scientists will [not] develop

<sup>(61)</sup> Gordon Edwards, Canadian Coalition for Nuclear Responsibility, Issue No. 7, February 3, 1987, p. 7 and 13.

<sup>(62)</sup> Carole Duyf, Concerned Citizens of Manitoba Inc., Issue No. 7, February 3, 1987, p. 29.

<sup>(63)</sup> Donovan Timmers, *ibid.*, p. 28.

<sup>(64)</sup> Rubin (1987), p. 5.