

not present a significant health hazard. Nonetheless, public perceptions cannot be ignored.

Radioactive materials are not a new or man-made phenomenon. They occur to some extent in all the materials in the biosphere, in rocks, soils and building materials. The Parliament Buildings are significantly radioactive. I suppose those of us who have been around here a long time are in some danger. The level of radioactivity here is considerably higher than that from some low level radioactive wastes. This background indicates that people in industrial countries, especially, receive a significant dose on average. For medical purposes we know that the benefits of radiation far outweigh the slight additional risk it imposes.

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Radioactivity is one of the most thoroughly studied pollutants known and one of the easiest to detect and monitor. The health impact of very low levels of radiation is so small that it is extremely difficult to measure. As with many other potential carcinogens, including sunshine, it takes a significant dose of radiation to pose a significant risk of cancer. Thus the risks of radioactivity should be looked at in the context of the other risks we face. They should also be seen in the context of the benefits derived from the activities which produce them.

The Government has a number of objectives with respect to radioactive waste management. The over-all aim is to ensure that they are safely and economically stored and ultimately safely disposed of in a safe, economic and permanent way.

The owner or producer of the wastes has the primary responsibility for their storage and disposal, according to the principle "the polluter pays". The polluter pays theory is still not totally acceptable to industry, especially in the United States where, as all Hon. Members are aware, there is a great deal of reservation on the part of industry to being forced to pay the consequences of sulphur emissions. The polluter pays principle in the nuclear industry has never been questioned. Everyone accepts it, including industry.

Where this responsibility can no longer be carried out, for example if the company no longer exists or lacks the capability or cannot be held liable, the Government must accept the ultimate responsibilities. In this context, Canada's objective policies are as follows: First, to ensure that organizations and funding exist to carry out federal responsibilities in the area; second, to reach agreement with the provinces on a distribution of responsibilities for radioactive waste and to co-operate with them to solve existing problems; third, to ensure that regulatory and political processes exist for determining the acceptability of the concepts, sites and facilities required for effective waste management.

I would like to describe the situation with respect to the three kinds of radioactive waste in Canada: irradiated fuel, or high-level wastes, uranium mine tailings and low-level wastes. I will also indicate what the federal Government is doing in each area.

Dealing first with high-level wastes, since 1978 a joint Canada-Ontario research program, managed by AECL and

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Ontario Hydro, has been investigating all aspects of used fuel management. AECL is assessing the generic concept of deep geologic disposal in the stable rocks of the Canadian Shield. This program has been approved in principle by the Canadian Government and funded at a level of about \$30 million per year. A process has been established for the evaluation of this generic concept. It will require review by the regulatory authorities, in this case the staff of the AECB and the environment departments, then public hearings and, finally, approval by the AECB and by governments. Performance criteria for repositories are being developed by the AECB on an interactive basis.

No site selection for a repository will occur before the concept is approved. This decision was taken in order to de-couple the research activity in particular locations from the possibilities of repository siting there. We hope the approval can be obtained the early 1990s, although research will undoubtedly continue beyond that date. That is the kind of timetable we are talking about. We are not rushing into anything. We are going to do it thoroughly, in a fashion which will be scientifically defensible anywhere and any time.

There may not be any material defined as high level nuclear fuel waste until well into the next century. The utilities will wish to store their used fuel until it is decided whether to re-process and recycle it or not. Only after that decision will we actually have high-level wastes, either used fuel to be disposed of or a roughly equivalent amount of reprocessing waste.

With the present relation between nuclear power growth and uranium supply in Canada, that decision point appears a long way away. We may not need either a site or a repository for 30, 40, 50 years or more. If we build one earlier, we may have no waste to put in it. Thus our used fuel management policy is essentially one of long-term storage. Canada has always planned to store used fuel for a fairly long period. The period is simply longer now than it first appeared.

Several hundred years after the irradiated fuel or the reprocessing wastes are disposed of, their radioactivity will have decayed so that in the repository they will have levels of radioactivity roughly comparable to the original or deposit from which the uranium was mined. The longer term hazard from nuclear fuel wastes should be seen with this comparison in mind.

To the extent that safe and acceptable disposable methods are found for Canada's nuclear fuel wastes, we may wish to contribute to the establishment of international centres for spent fuel management. This would ensure that the spent fuel would be in a secure location. However, our primary aim is to find acceptable methods of managing our own wastes.

Let me turn to the low-level wastes. There are several hundred thousand tons of historic low-level waste in Canada, much of it in the form of lightly contaminated soil. These wastes do not present a significant threat to public health and safety, but they are often problematic because they have turned up within established communities and sometimes even in people's back yards, having found their way there by fill