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## USE OF NUCLEAR-POWER SOURCES IN OUTER SPACE

A Statement by Mr. William H. Barton, Ambassador and Permanent Representative of Canada to the United Nations, to the Scientific and Technical Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space, February 13, 1978.

Normally our opening statement to a session of this subcommittee would be devoted to the full range of agenda items before us. This year, however, we wish to inform this subcommittee of a recent serious incident involving the re-entry and impact in Canada of a satellite with radioactive materials. We also wish to draw the attention of the subcommittee to some of the disturbing implications of this incident and to make some proposals for follow-on study and action. It is fortuitous that this session of the subcommittee follows closely the developments I now shall outline. In our view, the United Nations Committee on the Peaceful Uses of Outer Space, with its subcommittees, is the forum where this matter should most appropriately and logically be introduced and first considered.

On the morning of January 24, 1978, components of a space object containing a nuclear-power source fell on Canadian soil, fortunately in a largely-uninhabited part of the country. The debris that has since been located in Canada's Northwest Territories is believed to consist of component parts of the satellite launched by the Soviet Union on September 18, 1977, and known as *Cosmos 954.*

The technical facts of the situation are as follows. The space object in question entered the earth's atmosphere at 0653 Eastern Standard Time north of the Queen Charlotte Islands, on Canada's Pacific Coast. Subsequently, following approximately a three-minute burn period during re-entry, some pieces of the satellite impacted in the Northwest Territories and have been located between Great Slave Lake (62°N 114°W) and Baker Lake (64°N 96°W). The Canadian authorities had earlier learned of the possibility of uncontrolled re-entry of this satellite, which had shown signs of instability and decaying orbit in previous weeks. However, no accurate predictions were available to us as to the time and area of re-entry in the earth's atmosphere or the point of impact. Nor did we have any information as to the degree of disintegration of the object likely to occur on re-entry in the atmosphere.

We were informed by the Soviet Union after impact that the satellite contained a nuclear-power reactor fuelled by enriched uranium 235. A major search and recovery operation was mounted, led by the Canadian Armed Forces and the Atomic Energy Control Board of Canada, with assistance from other agencies. Valuable assistance was also rendered by technical experts and equipment provided by the U.S. Government. The search, which still continues, has located a number of satellite fragments, some by radiation-detection and some visually. A number of these fragments have been confirmed beyond doubt to be parts of the space vehicle. Up to the present, there have been no reports of injury to persons, but any assessments at this stage would be