

**LEGISLATIVE ASSEMBLY OF THE
NORTHWEST TERRITORIES
9TH ASSEMBLY, 3RD SESSION**

TABLED DOCUMENT NO. 24-80(2)

TABLED ON NOVEMBER 3, 1980

Tabled Document No. 24-60(2)
Tabled Nov 3/80

URANIUM EXPLORATION IN
THE NORTHWEST TERRITORIES

Comments prepared by the
Science Advisory Board
of the Northwest Territories

and

submitted to the
Legislative Assembly of the
Northwest Territories

18 September, 1980

Uranium is a radioactive material. It emits harmful radiation and minute quantities of radioactive radon gas. It is potentially hazardous to health and so must be handled with suitable precautions at all times.

Radiation is not a new hazard for man. He has always been exposed to natural radiation from a variety of environmental sources. X-rays and other kinds of radiation have been used by doctors for the whole of the 20th century. For almost forty years there has been extensive experience with radiation in connection with nuclear power and nuclear weapons.

Out of all this experience have come world-wide standards for acceptable levels of radiation. Since the bad effects of radiation may not appear for twenty or more years the final test of these standards is still to come. However, since they are already based on many years of experience they can be accepted with some confidence.

The Science Advisory Board has studied the reports of Mr. Justice Bayda of the Cluff Lake Inquiry in Saskatchewan, the British Columbia Commission of Inquiry under Mr. David Bates and the Kitts-Michelin Project in Labrador. The Board has concluded that suitable methods are available to reduce to an acceptable level the risk from radiation at all stages in the uranium cycle from exploration and development through mining, disposal of mine wastes.

production of nuclear fuel, operation of reactors, to the final permanent disposal of radioactive wastes.

All of these operations except the last, have been performed while maintaining the generally accepted standards of protection. Accumulated radioactive wastes from power production and other uses are being accumulated in temporary storage until a more permanent method for safe storage is selected.

High grade uranium ores can emit radiation and radon gas which might be harmful to an unprotected individual closely exposed to them. The hazard from simple prospecting is negligible but as soon as diamond drilling or trenching in high grade ores are undertaken, precautions must be taken.

The only problem that requires immediate attention in the Northwest Territories is the control of possible exposure to radiation and the containment of radioactive water and debris during exploration for uranium. Drilling crews must be protected. Also, since ore samples and cores are stored and shipped, precautions must be taken to prevent members of the public from exposure. Exploration and development activities may produce radioactive dust and contaminated ground waters and measures must be taken to contain these waste products.

Regulations should be written and enforced requiring the use of appropriate instruments to detect radiation from drill cores, exposed ore or radon gas from drill holes. If radiation above a specified level is detected, holes should be plugged, exposed ore covered or posted and cores shielded.

It should be possible to draft regulations based on available knowledge within a few months. These regulations, appended to the appropriate Territorial Ordinance would bring the most recent knowledge to uranium exploration practices in the Northwest Territories.

Regulations to cover the later stages in the uranium cycle can then be drafted as required. By postponing each stage until it is required, full advantage can be taken of experience gained in other areas.

O. M. Solandt,
Chairman,
Science Advisory Board.

18 September, 1980.

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ሰንጠረዥ 18, 1980

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