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Tritium in Our Drinking Water: *The Tip of the Radioactive Iceberg*

A Media Briefing from the Tritium Awareness Project

Recent events have revealed a reluctance on the part of Atomic Energy of Canada Limited and the Canadian Nuclear Safety Commission to provide Canadians and their elected representatives with objective scientific information about radioactive materials released into the Ottawa River – the source of drinking water for large populations downstream.

The two federal agencies obscured the facts surrounding the release of large quantities of radioactive tritium into the air and into the river from December to February. The Minister of Natural Resources, who was apparently misinformed on this matter, told the House of Commons that there was no radioactivity going into the Ottawa River, when in fact there were at least 28 trillion becquerels of radioactive tritium being deliberately dumped into the River in the form of “controlled releases”.

The Chalk River NRU reactor also released large quantities of radioactive water vapour into the air – four trillion becquerels on December 5, 2008, and another 11 trillion becquerels on February 22, 2009.

“These are large amounts of radioactivity; it is completely inappropriate to compare such amounts to the drip-drip-drip of a leaky faucet, as Michael Binder did when testifying to the House Committee on Natural Resources,” said Michel Duguay, Ph.D., a nuclear physicist by training and a professor of Electrical Engineering at Laval University.

Mr. Binder – the Head of the Canadian Nuclear Safety Commission – told members of the House Natural Resources Committee that these tritium releases from the NRU reactor at Chalk River were “of no concern” and posed no risk to the health and safety of the public.

The CNSC’s enabling legislation gives that organization the duty not only of safeguarding the public health and safety, but also of disseminating “objective scientific information” on the nature of the risks.

“It is scientifically incorrect to say that there is no risk when a known carcinogen is added to the drinking water of a large population,” said Dr. Gordon Edwards,

president of the Canadian Coalition for Nuclear Responsibility. “People need to know the truth: there is no safe threshold of exposure to any cancer-causing agent,” he added. “Tritium is of special concern to pregnant mothers and unborn children, because it can cause abnormalities in developing embryos.”

Tritium is radioactive hydrogen, and easily combines with oxygen to form radioactive water. Municipal water treatment facilities cannot remove tritium from drinking water.

“Citizens have a right to know what is in the water that they are drinking,” said Meredith Brown, executive director of the Ottawa Riverkeeper. “The deliberate dumping of tritium into the river should be forbidden. Levels of tritium in our drinking water are routinely much higher than background, because of contamination from nuclear facilities licensed by the CNSC.”

Michel Duguay pointed out that tritium is a uniquely Canadian problem because of the heavy water that is used in Canada’s nuclear reactors. “Heavy water itself is not radioactive,” he explained, “but inside a Canadian nuclear reactor, a lot of tritium is created when the heavy water is bombarded with neutrons. Other reactors that do not use heavy water produce a great deal less tritium.”

Lynn Jones, a member of the Renfrew Concerned Citizen’s Committee, noted that a Tritium Removal Plant was built at Darlington Ontario to alleviate the radiation exposures to workers in CANDU nuclear power plants. “The very existence of this plant shows that tritium is considered a dangerous material for atomic workers. But now they are marketing this radioactive waste by sending it to SRB technologies in Pembroke, where self-illuminating exit signs are made by filling them with tritium. Not only is SRB technologies contributing to the pollution of the atmosphere and the Ottawa River, but they are exporting the problem to other countries – all under licence from the CNSC.”

Robert Del Tredici, founder of the Atomic Photographer’s Guild, pointed out that the recent radioactive contamination problem is just the tip of a radioactive iceberg. “Tritium is mass-produced in all Canadian nuclear reactors, and it finds its way into the water we drink, the air we breathe, and the food we eat. That’s why nuclear power is not a clean and green form of energy,” he said.

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