Federal government vows Canada will make HEU-free isotopes by 2016

By Ian MacLeod, OTTAWA CITIZENFebruary 28, 2013

Federal Minister of Natural Resources Joe Oliver announces approval of a long-term export license to LNG Canada Development Inc. in Vancouver, B.C., on Monday February 25, 2013. A terminal proposed by the Shell consortium in Kitimat, B.C., would export liquefied natural gas to Asia. LNG Canada is a joint venture of Shell, Korea Gas Corp., Mitsubishi Corp. and PetroChina International. THE CANADIAN PRESS/Darryl Dyck

Photograph by: DARRYL DYCK , THE CANADIAN PRESS

OTTAWA — By 2016, Canada will produce commercial quantities of medical isotopes without the controversial use of highly-enriched, weapons-grade uranium, the federal government has pledged.

The announcement follows news that Canada will ship 23,000 litres of highly-enriched uranium (HEU) liquid isotope waste to the United States, where President Barack Obama has made global civilian HEU reduction and repatriation one of his administration's national security priorities.

Natural Resources Minister Joe Oliver, speaking Thursday to an Ottawa gathering of the Canadian Nuclear Association, said $25 million in additional federal funding is being awarded to three promising Canadian projects that use cyclotrons and linear accelerators in the production of life-saving technetium-99m (Tc-99m), the most widely used medical isotope in the world.

Later with reporters, Oliver said the new isotope production technologies have been proven, but "what needs to be established is the production of a large amount that will be commercially available and we're encouraged by the progress so far, it's reached a fairly robust stage."

Asked whether the new technologies can ensure a secure, commercial supply, Oliver said "we're comfortable we can meet those objectives by 2016."

Oliver also announced the government will "shortly" open a "competitive procurement process" to select a private-sector partner to manage and operate Atomic Energy of Canada Ltd.'s (AECL) nuclear laboratories at Chalk River. Much of the world's supply of raw medical isotopes is manufactured inside the site's aging NRU research reactor using fresh, non-irradiated HEU imported from the U.S. NRU is to cease isotope production in 2016.

The Crown corporation saw its CANDU reactor division sold in 2011 to Candu Energy Inc., a wholly owned subsidiary of SNC-Lavalin Group.

“We are not selling or closing the Chalk River nuclear laboratories,” Oliver told several hundred delegates representing Canada’s nuclear establishment.

Under an arrangement known as a government-owned, contractor-operated, or GoCo, “the new model aims to bring private-sector rigour and efficiencies to the management of the laboratories and the goal of creating commercial opportunities and reducing the financial costs and risk for Canadian taxpayers,” he said.

He was unable, however, to say how much money the government will save under a partnership, which is expected to take about two years to put in place.

“Our government is committed to providing industry access to AECL’s expertise but we are also committed to taxpayers and that’s why over time the delivery of AECL’s science and technology services to industry will need to move to full costs recovery.”

The first priority of the new AECL will be to deal with the enormous toxic legacy at Chalk River and other AECL sites, he said.

The 37-square-kilometre Upper Ottawa Valley site holds 70 per cent of all the radioactive waste ever produced by AECL and its predecessor, the National Research Council of Canada.

The government is in the eighth year of an estimated $7-billion, 70-year federal cleanup of its “legacy” wastes across the country and “by engaging the private sector we stand to benefit from experience and best practices from around the world,” Oliver told the gathering.

He later confirmed recent Citizen reports that AECL plans to truck 23,000 litres of HEU solution along Canadian highways to a South Carolina reprocessing plant, possibly as early as this summer. The mixture contains an estimated 161 kilograms of HEU, enough to make more than six simple nuclear bombs.

“The costs of dealing with it will no longer be our responsibility (and) it will help us fulfil our non-proliferation obligations,” he said.

Thousands of radioactive spent reactor fuel rods also are to be shipped to the U.S., according to U.S. government documents.

As the world’s leading producer of medical isotopes, Canada has long been accused of paying lip-service to global non-proliferation efforts because of AECL’s continuing use and stockpiling of fresh HEU from the U.S. for isotope production at Chalk River. While other isotope-producing countries have successfully converted to production with low-enriched uranium, the federal government has taken a hands-off approach to the issue.

Non-proliferation advocates fear terrorists could strike and steal the material to build a weapon, or carry out an act of radiological sabotage.

Oliver, too, raised the spectre of nuclear terrorism on Canadian soil Thursday. Referring to AECL's continued role supporting nuclear safety through research and development, he said, "this would include detections of nuclear materials that may arrive at our borders with malicious intent. We must and we will enhance our capacity to respond quickly and effectively in the event of a nuclear incident in Canada or elsewhere."

He did not elaborate when asked later to expand on his remark.

Under the federal Isotope Technology Acceleration Program announced Thursday, three organizations will each receive about $7 million: a University of Albert cyclotron project; cyclotron work at the TRIUMF subatomic physics laboratory in British Columbia; and Manitoba's Prairie Isotope Production Enterprise (PIPE) which uses an electron accelerator to make Mo-99. The federal government previously invested $35 million in the program.

Raw Mo-99 is now produced in the NRU by irradiating "targets" made from fresh, U.S.-origin HEU and is refined using an acidic solution that leaves behind large quantities of highly radioactive liquid waste.

As the refined Mo-99 decays, it produces Tc-99m, which accounts for about 80 per cent of all nuclear medicine procedures.

imacleod@ottawacitizen.com

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