



May 30, 2014

Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555
Attention: Rulemaking and Adjudications

**DOCKETED
USNRC**

June 9, 2014 (3:30p.m.)

OFFICE OF THE SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Docket No. 11006162

**Re May 29 Federal Register Notice for "Application for a License to Export High-Enriched Uranium"
to Canada, by National Nuclear Security Administration -
Application Number XSNM3752, Docket No. 11006162**

To Whom it Concerns:

On behalf of the public interest groups Savannah River Site Watch (SRS Watch – www.srswatch.org), I am writing to express concern about the export to Canada of highly enriched uranium from the National Nuclear Security Administration's Y-12 National Security Complex in Oak Ridge, Tennessee to the Atomic Energy of Canada, Limited's National Research Universal (NRU) reactor at Chalk River Laboratories in Canada. The end use of the highly enriched uranium (HEU) is for production of Molybdenum-99 medical isotopes.

While SRS Watch is not now formally intervening against the license request now before the U.S. Nuclear Regulatory Commission to export 7.0 kilograms of 93.35% HEU to Chalk River, we want to go on record as supporting a prompt halt to HEU shipments from the U.S. to Canada. No HEU shipments to the NRU reactor should take place beyond the 2016 date for ending HEU-use in the NRU reactor, as recently announced in 2013 Natural Resources Minister Joe Oliver.

While conversion of the aging NRU reactor from HEU use is long overdue, Canada must be held to its commitment that HEU use at the reactor will soon halt and that other non-reactor options for medical isotope production will be pursued. This means that the current license request for HEU export will be one of the very last that will be submitted. We will be attentive to any future applications for export of HEU from the U.S. to Canada and will oppose any requests which would take the NRU reactor beyond the HEU halt in mid-2016.

Additionally, we want to express concern about plans by the U.S. Department of Energy to import 23,000 liters of liquid high-level waste from Chalk River for processing in the DOE's aging H-Canyon reprocessing plant located at the Savannah River Site in South Carolina. Though a request for a full Supplemental Environment Impact Statement (SEIS) was requested by numerous public interest groups in the U.S. (at <http://tinyurl.com/mwehqhw>), DOE has so far ignored that request. Such an SEIS is still needed as it would evaluate alternatives to the risky shipment of such waste over our highways and bridges and would evaluate options to treat the liquid waste in place at Chalk River.

Waste from the reprocessing of HEU targets has in recent years been managed in Canada and there has been no explanation as to why the liquid HLW, which has been stored in a single tank



since 2004, cannot also be processed on site at Chalk River and stored in Canada. Waste from processing of targets made from the final shipments of HEU to Canada must also be disposed of in Canada.

Though there have been claims that the liquid waste shipment is being planned for nuclear non-proliferation reasons, denaturing of the HEU in the liquid waste via addition of denatured uranium nitrate to the waste tank may well present the soundest option from a nuclear non-proliferation standpoint. DOE's rejection of the request to prepare an in-depth SEIS means that the evaluation of this proposal and options to manage the waste in Canada have been ignored.

Failure to consider the "denature-in-place" option in an EIS is a blow to sound nuclear non-proliferation policies in both the U.S. and Canada and reflects a denial to citizens on both sides of the border to submit formal comment on that and other disposition options.

Given the goal of promptly eliminating all commerce in bomb-grade uranium, I thank you very much for considering the views expressed in this letter. I request that this letter and attachments be made a formal part of the record for export license XSNM3752 and that they be placed in the NRC's digital library. If you have questions about this letter or the issues discussed in it, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Tom Clements". The signature is written in a cursive style with a long horizontal line extending from the end of the name.

Tom Clements
Director, SRS Watch
tel. 803-834-3084
tomclements329@cs.com

Cc: Mr. Richard Goervich, Senior Policy Adviser, Office of Nonproliferation and International Security, National Nuclear Security Administration



Savannah River Site Watch
SRS Watch - www.srswatch.org
Columbia, South Carolina
Media Alert
May 29, 2014

**U.S. Department of Energy (DOE) Applies to Nuclear Regulatory Commission
to Export Bomb-Grade Uranium to Canada**

**National Nuclear Security Administration (NNSA) Seeks to Export 7 Kilograms of Highly Enriched
Uranium to NRU Reactor at Chalk River Laboratories in Ontario, for Medical Isotope Production**

***Plans to Ship 23,000 Liters of Liquid High-Level Waste from Chalk River
to DOE's Savannah River Site Slowly Proceeding***

Columbia, South Carolina - The U.S. Department of Energy has applied to the Nuclear Regulatory Commission for a license to export 7 kilograms of highly enriched uranium (HEU) to the National Research Universal (NRU) medical isotope production reactor in Canada. U.S. non-proliferation experts anticipate that this will be among the last shipments of HEU to Canada.

Notice of the export license application was printed in a notice in today's Federal Register - *see links below*. The notice states that the HEU would be exported "to fabricate targets at the National Research Universal reactor in Canada for ultimate use in production of medical isotopes."

The bomb-grade uranium is stored at the National Nuclear Security Administration's (NNSA) uranium storage facility at the Y-12 complex at the Oak Ridge site in Tennessee. The HEU would be fabricated into "targets" that are irradiated in the aging NRU reactor to produce medical isotopes. The HEU in the targets is converted Molybdenum-99, which decays into the short-lived isotope technetium-99m (Tc99m), which is used in many medical procedures.

"We hope that this among the very last shipments of bomb-grade uranium to Canada," said Tom Clements, director of Savannah River Site Watch in Columbia, South Carolina. "For nuclear non-proliferation reasons, use by Canada and other countries of HEU in medical isotope production and in research reactors must cease and reactors must either halt operation or be converted to low-enriched uranium that cannot be used in nuclear weapons. Canada and other countries must with all deliberate speed develop and deploy non-reactor options for production of essential medical isotopes."

Clements has tracked the non-proliferation concerns associated with HEU use for many years and visited the NRU reactor at Chalk River in 2001.

Nordion, Inc. operates the medical-isotope production facilities at Chalk River Labs, which is operated by Atomic Energy of Canada Ltd. The Nordion board has approved sale of the company.

Natural Resources Minister Joe Oliver has stated that the NRU reactor would cease operation in 2016 and that Canada would convert to non-reactor methods to produce medical isotopes, such as linear accelerators, would be pursued. Efforts to replace the NRU reactor, which started operation in 1957, when two MAPLE reactors failed to operate when technical issues arose.

"If Canada does not halt HEU use by 2016, we will oppose any further export from the US of highly enriched uranium and consider a formal intervention with the NRC," said Clements.

To extract the Mo-99, the HEU targets are dissolved in acid and the resulting highly radioactive waste is solidified. One tank, filled with by-product waste in 2004, contains 23,000 liters of liquid high-level waste that is planned to be shipped to the DOE's Savannah River Site in South Carolina. Both DOE and the Canadian Nuclear Safety Commission have refused to prepare "environmental impact statements" on the shipment and have not analyzed management of the high-level waste (HLW) in Canada. Public interest groups have protested the shipment of the liquid HLW, including risk of en-route accidents, and pointed out that the shipment is not being done for nuclear non-proliferation reasons but rather is for waste management purposes in Canada and to make money for SRS.

At SRS, the liquid waste would be processed in the old H-Canyon reprocessing facility, to remove remaining HEU, with resultant waste dumped into on-site HLW tanks. SRS waste tanks are slowly being closed and should not be receiving new waste, according to Savannah River Site Watch.

"The shipment of liquid high-level waste is unprecedented and poses risks in transport and handling," said Clements. "We strongly oppose the dumping of nuclear waste by Chalk River on the Savannah River Site, where it will put strain on an already challenged waste-management system," said Clements. "If the waste import is still being considered, DOE must prepare an environmental impact statement involving public participation and, for nuclear non-proliferation reasons, must focus on management of the waste in Canada."

SRS Watch learned on May 28 that the Nuclear Regulatory Commission has finished reviewing the license application for the liquid HLW shipping cask by NAC International but has further questions of the company. Review of a response to new "request for additional information" (RAIs) will take another 8 weeks and then a "certificate of compliance" could be issued or more questions could be sent to NAC International. The Canadian Nuclear Safety Commission has evidently not licensed the transport cask in Canada and may move to do that after the US license the cask for liquid waste shipment.

Notes:

1. A copy of group letter to DOE asking for an EIS on liquid HLW shipment is available on request.
2. Federal Register notice of May 29, 2014:

text: <http://www.gpo.gov/fdsys/pkg/FR-2014-05-29/html/2014-12481.htm>

pdf: <http://www.gpo.gov/fdsys/pkg/FR-2014-05-29/pdf/2014-12481.pdf>

[Federal Register Volume 79, Number 103 (Thursday, May 29, 2014)]

[Notices]

[Pages 30903-30904]

NUCLEAR REGULATORY COMMISSION

Application for a License To Export High-Enriched Uranium

Pursuant to 10 CFR 110.70 (b) ``Public Notice of Receipt of an Application,`` please take notice that the Nuclear Regulatory Commission (NRC) has received the following request for an export license. Copies of the request are available electronically through ADAMS and can be accessed through the Public Electronic Reading Room (PERR) link <http://www.nrc.gov/reading-rm.html> at the NRC Homepage.

A request for a hearing or petition for leave to intervene may be filed within thirty days after publication of this

[[Page 30904]]

notice in the Federal Register. Any request for hearing or petition for leave to intervene shall be served by the requestor or petitioner upon the applicant, the office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555; the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555; and the Executive Secretary, U.S. Department of State, Washington, DC 20520.

A request for a hearing or petition for leave to intervene may be filed with the NRC electronically in accordance with NRC's E-Filing rule promulgated in August 2007, 72 Fed. Reg 49139 (Aug. 28, 2007). Information about filing electronically is available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. To ensure timely electronic filing, at least 5 (five) days prior to the filing deadline, the petitioner/requestor should contact the Office of the Secretary by email at HEARINGDOCKET@NRC.GOV, or by calling (301) 415-1677, to request a digital ID certificate and allow for the creation of an electronic docket.

In addition to a request for hearing or petition for leave to intervene, written comments, in accordance with 10 CFR 110.81, should be submitted within thirty (30) days after publication of this notice in the Federal Register to Office of the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Rulemaking and Adjudications.

The information concerning this application for an export license follows.

NRC Export License Application

Description of Material

Name of applicant date of application date received Material type Total quantity
End use Destination
application No. docket No.

DOE/NNSA--Y-12 National Security High-Enriched 7.0 kilograms To
fabricate Canada. uranium-235
Complex, April 23, 2014, April Uranium (93.35%). contained in 7.5
targets at the 28, 2014, XSNM3752, 11006162. kilograms uranium.
National Research
Universal reactor
Canada for in
ultimate use in
production of
medical isotopes.

For The Nuclear Regulatory Commission.

Dated this 15th day of May 2014 at Rockville, Maryland.
Michael J. Case,
Acting Deputy Director, Office of International Programs.
[FR Doc. 2014-12481 Filed 5-28-14; 8:45 am]
BILLING CODE 7590-01-P

3. DOE's Supplement Analysis (prepared in secret & without public input) and Amended Record of Decision on import of liquid high-level waste from Canada:

<http://energy.gov/nepa/downloads/eis-0279-sa-01-supplement-analysis>

<http://energy.gov/nepa/downloads/eis-0279-amended-record-decision>

New course set for medical isotopes; Weapons-grade uranium will not need to be used after 2016, minister says

Ottawa Citizen

Ottawa, Ontario

Fri Mar 1 2013

Page: A3

Section: News

Byline: **Ian MacLeod**

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 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 lifesaving technetium-99m (Tc99m), 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. 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.

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.



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