

July 6, 2000

MEMORANDUM TO: Chairman Meserve  
Commissioner Dicus  
Commissioner Diaz  
Commissioner McGaffigan  
Commissioner Merrifield

FROM: Janice Dunn Lee, Director */RA/*  
Office of International Programs

SUBJECT: JULY 10 BRIEFING ON THE PROPOSED EXPORT OF HIGH  
ENRICHED URANIUM TO CANADA: BACKGROUND  
INFORMATION AND QUESTIONS

The following information is offered for use by the Commission in preparing for the July 10 meeting. The Office of the Secretary has distributed copies of the briefing materials submitted by the Executive Branch, MDS Nordion and the Nuclear Control Institute.

Background:

On June 29, 1999, the Commission approved a 5-year license for the export of HEU targets to Canada for use in medical isotope production (molybdenum-99) at the new MAPLE complex at Chalk River -- two small reactors and a processing facility, the construction of which is now completed. Approval followed a public Commission meeting wherein the license applicant (Transnuclear, Inc.), the medical isotope company (MDS Nordion), the reactor and facility operator (Atomic Energy of Canada, Ltd., AECL), the U.S. Executive Branch (Departments of State and Energy and Argonne National Laboratory) and the Nuclear Control Institute (NCI), summarized their positions and answered Commission questions. The meeting followed months of review, and written questions and answers.

The license authorizes 130.65 kilograms of HEU to be exported over 5 years, but the Commission has required the applicant and the U.S. State Department to file annual reports to NRC on progress in developing LEU targets for the MAPLE reactors. The reporting provision allows the Commission opportunities to modify or terminate the license if insufficient progress or cooperation is evidenced. (The 1992 Schumer amendment to the Atomic Energy Act limits U.S. exports of HEU fuel or targets to foreign research reactors which have pledged to convert to LEU and for which there exists an active U.S. effort to develop an LEU alternative.)

As recently as 1997, the Commission had approved licenses for HEU target supply to AECL's NRU reactor (an old reactor near the end of its operational life). In those cases, the Commission had found that statutory requirements were satisfied because the U.S. was actively developing an LEU target for use in Canadian research reactors and the U.S. and Canada had exchanged diplomatic notes agreeing that LEU targets would be used to produce

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medical Mo-99 when such targets became available. NCI argued then that Argonne National Laboratory (DOE's agent in the U.S. Reduced Enrichment for Research and Test Reactors program) did not, in fact, have an active LEU development program for Canada because the Canadians were not being sufficiently cooperative.

The same concern has carried over to the present case. In NCI's view, Argonne (ANL) has not received sufficient access to Canadian data and funding to assure successful conversion to LEU targets. Moreover, MDS Nordion's own technical investigations into the feasibility of converting from HEU to LEU targets, and statements confirming their intention to complete such conversion in the future, are suspect in NCI's view, because MDS Nordion has seemed to keep Argonne at arm's length, has moved at a deliberative pace in its studies notwithstanding the urgency felt by others, and has not volunteered to delay use of the new MAPLE facilities until LEU targets can be used there.

It is generally accepted that the costs of backfits at the MAPLE site will increase significantly once the facilities become irradiated. Because cost is included in the Schumer amendment language to determine whether LEU "can be used" in a foreign reactor, NCI is especially concerned that the increased costs of plant changes following irradiation could then be used by MDS Nordion to justify a decision not to convert to LEU targets and to request continued supply of HEU targets from the U.S.

Last June, MDS Nordion outlined several considerations which made them unable or unwilling to defer isotope production activities at the MAPLE complex for several years until LEU targets can be tested, approved and used there. Instead they plan to use HEU targets in the MAPLE complex and later convert to LEU targets when everything is in proper order, including regulatory approvals and FDA re-certification. Their actions over the last several months to study the impediments to conversion and to develop appropriate technical and business solutions in a systematic way, appear consistent with this approach.

Questions for the Executive Branch:

1. Has ANL been able to obtain information from the Canadian side sufficient to conclude that MDS Nordion is taking actions to ensure compliance with the Commission's Memorandum and Order of June 29, 1999?
2. What is the Executive Branch's overall assessment of the sufficiency of the commitments and actions of MDS Nordion to date relative to U.S. legal and policy requirements for the continued supply of HEU?
3. Does the Executive Branch recommend that the Commission modify in any way the conditions in its Memorandum and Order?
4. NCI has raised questions about perceived delaying tactics on the part of MDS Nordion. Do you share such concerns?
5. Please comment on the role of the Canadian Government, if any, in working with the U.S. Government in facilitating the conversion to the use of LEU targets at the MAPLE facility. As a matter of mutual non-proliferation concern, are you satisfied that the Canadian Government has taken appropriate steps to encourage or require that the conversion process proceed on an expedited basis?

Talking Points for MDS Nordion:

1. What would you say to critics who say you have wasted an opportunity over the past several months in regard to identifying and seeking regulatory approval to make changes in the MAPLE Nuclear Processing Facility (NPF) to permit the early use of LEU target material?
2. Regarding the remaining technical and regulatory hurdles to be overcome prior to the approved use of LEU targets, what are the best and worst scenarios in respect to cost and timing?
3. Please describe the nature of your competitors in the production of Molybdenum-99. Are you satisfied that appropriate efforts are being made to ensure the world-wide conversion to the use of only LEU targets for MO-99 production?
4. The NRC export license (XSNM-3060) authorizes the export of 130.65 of HEU to be exported over 5 years. Have conditions changed since the issuance of this license altered in any way your need for the total amount of this material? Specifically, would a lower total amount suffice or would it be possible to meet your production needs with a stretched out delivery of reduced quantities over the initial period of the licence, thus enabling reduced HEU shipments prior to the eventual conversion to LEU targets?

Questions for the Nuclear Control Institute:

1. You have stated that successful conversion of Canada's medical isotope production program to the use of LEU will pave the way for universal implementation of this conversion norm. Specifically, which countries do you believe will be swayed one way or the other if delays are experienced in Canada?
2. You have made harsh and sweeping indictments of the motives and intentions of MDS Nordion over the last several years in failing to aggressively pursue every possibility for hastening the possible use of LEU targets. Where is such aggressive pursuit identified as a requirement in U.S. law or in the diplomatic notes exchanged between the U.S. and Canada? If we hold the Canadian parties to a higher standard, shouldn't we hold ourselves to that standard? Did NCI, ANL or other U.S. parties request the Canadian government and MDS Nordion to take LEU target processing into account when the MAPLE facilities were being designed?

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