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December 18, 2000

The Honorable Richard Meserve  
Chairman  
U.S. Nuclear Regulatory Commission  
One White Flint North Building  
11555 Rockville Pike  
Rockville MD 20852

New Transnuclear Request for Export of HEU to Canada

Dear Chairman Meserve:

The Nuclear Control Institute (NCI) has carefully reviewed the application of Transnuclear, Inc. for a license (XSNM 03171) to export 10.05 kilograms of highly enriched uranium (HEU) in the form of metal pieces over a one-year period for the production of targets to be irradiated by Atomic Energy of Canada, Limited (AECL), as published in the Federal Register on November 16, 2000 (65 Fed. Reg. 69345).

NCI does not oppose the export of this quantity and form of HEU for use as targets in the NRU reactor, given the unusual circumstances of the application. The applicant states on behalf of AECL that the material is needed to ensure the uninterrupted production of radioisotopes, for medical purposes, in the NRU reactor and its associated processing facility because of an unanticipated delay in the start-up of the new MAPLE reactors and associated New Processing Facility (NPF). For this reason, NCI is not petitioning the Commission for leave to intervene as a party in opposition to the export. Nor are we requesting an adjudicative hearing.

At the same time, we wish to underscore the significance of new and disturbing facts brought to light in this license application that have a direct bearing on the Commission's supervision of the export of a total of 90.4 kilograms of HEU to Canada during the remaining period of another license, XSNM 03060, which was issued on July 19, 1999. Of particular concern is the following statement by the applicant in support of the new license application:

As AECL has previously indicated to the NRC, it was anticipated that the supply of medical isotopes from the NRU reactor could not continue beyond May 2001, because of regulatory limitations on the storage capacity of

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AECL's Fissile Solution Storage Tank (FISST). The above mentioned delay in operating the MAPLE reactors and NPF, however, forced AECL to renew its efforts to identify solutions to the current limitation on the capacity of the FISST. As a result, AECL has identified potential solutions, including cementation of waste as well as authorization by Canadian regulatory authorities of an increase in the permissible limit of uranium concentration in the FISST.

You will recall that NCI, in its testimony at the Commission's public meeting on July 10, 2000, urged the Commission to examine closely MDS Nordion's changing story about how long it could rely on the NRU facilities on the basis of its contention that the capacity of the waste tank was rapidly being reached. We stated:

In this context, it should be noted that the applicant's latest assertions about the remaining life of the NRU processing facility directly contradict its testimony of last year. At last year's public meeting, the applicant argued against any delay in starting up the NPF, to permit modifications to be made, on grounds that the NRU would reach capacity by the end of this year. Iain Trevena of Nordion stated that "with respect to NRU we have a storage tank that's used to contain our high-level fission waste. That storage tank will be filled by the end of the year 2000." NCI pointed out that the capacity of the tanks had been increased previously and might be able to be increased again to extend isotope production at the NRU while modifications were made to the NPF. But John Matthews of AECL insisted that "there is a technical barrier and that is the waste tanks will be full at the end of the year 2000." Remarkably, only a year later, the applicant's story has changed. Now it asserts that the NRU waste tank will not reach capacity until "approximately the Spring of 2001." This is unfortunately another indication that the applicant has played fast and loose with the facts, apparently to provide excuses for not making modifications to the NPF prior to start-up, as the Commission had intended.

Grant Malkoske, MDS Nordion's vice-president for engineering and technology, responded in this way at the July 10 meeting:

In recent letters to the Commission and during the Commission's June 16, 1999, Public Meeting, NCI argued that MDS Nordion and AECL should continue to irradiate HEU targets in the 40-year-old NRU reactor and its

associated radioisotope processing line while they are converting the MAPLE reactors and the NPF to use LEU targets. However, the availability of the NRU and its processing facility to supply medical isotopes will end by approximately the Spring of 2001, because the fissile liquid waste storage capacity of that facility will be reached. Moreover, as MDS Nordion pointed out at the Commission's Public Meeting on June 16, 1999, there are other important regulatory and operational reasons why NCI's suggestions regarding continued use of the NRU cannot be implemented.

In the new license application, applicant seeks additional HEU for use in targets at NRU until June, 2002---another year beyond what it projected in its testimony last July to be possible to achieve at NRU, based on limited waste tank capacity. Because it is now clear that isotope production in the NRU will be possible at least until June 2002, there was in fact time to develop LEU targets for the NPF prior to startup of isotope production in the MAPLE reactors. Had the Commission been made aware of this capability at the time it was considering the original export license application, it might well have decided not to approve export of HEU targets for the MAPLE reactors. Thus, the applicant's incorrect representation of the potential capacity of the NRU waste tank led the Commission to issue the previous license for HEU targets. This is a compelling example of how the applicant has benefited from conveying inaccurate information to the Commission.

While NCI does not oppose the new export request, we wish to point out that there is no need to issue a new license. The 10 kilograms of HEU needed for NRU targets can be drawn from the quantity of HEU designated for MAPLE. The Commission merely has to modify XSNM 03060 so that 10 kilograms of the already authorized 90 kilograms of HEU in dioxide form can be exported in the form of metallic HEU for use in NRU targets. AECL's contention that all of the HEU targets licensed to be exported to the MAPLE reactors "are likely to be needed for the MAPLE reactors" before conversion to LEU targets can proceed is highly questionable. In any event, this total amount of HEU MAPLE targets will not be irradiated during the period of the license because of the delay in start-up of the MAPLE reactors.

There is no logic to the applicant's assertion that "an unavoidable consequence of a delay in operation of the MAPLE reactors is a corresponding extension of the time that will be required to complete the HEU to LEU conversion program." Since no modifications are necessary to the MAPLE reactors but only to the NPF to achieve conversion, there is no reason to believe that delaying start-up of MAPLE should delay conversion to LEU targets.

However, the delay, and the sudden availability of waste storage capacity at NRU, provides the Commission the opportunity to pursue with the applicants the feasibility of extending production at NRU long enough to complete development of the LEU targets

before the NPF goes hot. The Commission, as it did at the public meeting in July, should avail itself of a knowledgeable official from the Argonne National Laboratory (ANL) to evaluate the applicant's assertions that the NRU waste tank's capacity cannot be further expanded, and that all of the HEU MAPLE targets licensed for export must be used at the MAPLE facilities before conversion to LEU targets. Indeed, there is no evidence that the irradiation of HEU targets in the MAPLE reactors and processing of HEU targets in the NPF must be a precursor for conversion to LEU targets.

The Commission should also invite ANL experts to describe the progress being made in MDS Nordion's target conversion program toward achieving a new calcination process that is essential for introducing LEU targets in the NPF. If progress is being made, it may be possible to have an LEU target ready for demonstration sooner than anticipated, perhaps in as little as six months. If this target can be test irradiated in the NRU, or possibly in a U.S. test reactor like the ATR at Idaho Falls, it could be introduced promptly into the MAPLE reactors and the NPF when they start up. The Commission should inquire of Argonne as to these possibilities. If LEU target development can be expedited, the Commission should also seek advice from Canadian regulatory authorities, as well as the U.S. Food and Drug Administration, as to whether the approval process can be completed in less than the three years originally estimated by MDS Nordion.

The Commission will also have to decide whether shipments of MAPLE HEU targets beyond those exported this year should proceed, given the delay in operation of the MAPLE reactors and the certainty that all of the material authorized for export will not be consumed during the period of the license. The license authorizes annual shipments, and the Commission already has deducted 40 kilograms of HEU from the license after the applicants failed to export that amount during the first year of the license, as authorized. This Commission decision was consistent with NCI's testimony last July: "To avoid export of any HEU surplus to the applicant's needs, in accordance with U.S. law and policy, we urge the Commission to modify the current license immediately to reduce the total amount of HEU under the license...."

The same principle, if applied to future exports, would require deduction of 22.6125 kilograms of HEU, the amount authorized for annual export, each year the material cannot be used for its designated purpose, as stated on the license: "Target material for the production of medical isotopes in the MAPLE 1 and MAPLE 2 Reactors." Until the MAPLE reactors become operational, no HEU targets beyond those already shipped this year should go forward.

The Commission, according to Condition 10 of the license, is due to receive a yearly status report in July on the progress made in developing LEU targets for the MAPLE reactors. However, the Commission might wish to explore now at a public meeting what significance the new license application to export HEU for targets at NRU might have for facilitating conversion to LEU MAPLE targets before the NPF becomes operational. At the public meeting last July, NCI advised the Commission, "[O]nce the [MAPLE] facilities begin operating on HEU, the applicant may cite the risks of interrupting production and costs of conversion as grounds for using HEU in perpetuity.

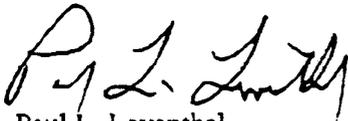
Indeed the applicant reiterates in its viewgraphs today that conversion will occur only if it is 'economically feasible'."

In October 2000, at the annual International RERTR Conference in Las Vegas, MDS Nordion participated with other medical radioisotope producers in a special session to begin exploring ways to establish a level playing field for universal conversion to LEU targets. If AECL and MDS Nordion could help to ensure economic conversion to LEU targets by continuing to utilize HEU at NRU until LEU targets are developed for MAPLE, their own commercial interests would be served, and they would set an example for the international radioisotope community.

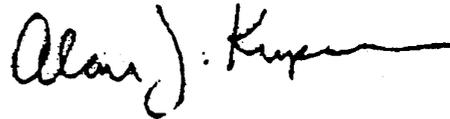
NCI urges, therefore, that the commission consider (1) approving the export of the requested 10 kilograms of HEU for use at NRU, but as an amendment to the existing license rather than as a new license, and (2) using this opportunity to encourage further U.S.-Canadian cooperation to facilitate LEU target development for the MAPLE reactors before the NPF becomes operational. We urge the Commission to convene a public meeting for this purpose.

Thank you for your consideration of these views.

Sincerely,



Paul L. Leventhal  
President



Alan J. Kuperman  
Senior Policy Analyst