UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of		
TRANSNUCLEAR, INC., on behalf of, ATOMIC ENERGY OF CANADA, LTD.,	Docket Nos.	11004997 & 11004998
	License Nos.	XSNM-03012 & XSNM-03013
(Export of 93.3% Enriched Uranium)		

AFFIDAVIT OF JEAN-PIERRE LABRIE Ph.D.

I, Jean-Pierre Labrie, being duly sworn, say as follows:

1. I am the General Manager, Isotope Business, Atomic Energy of Canada Limited (AECL). AECL is a Canadian federal Crown Corporation.

2. I am the manager within AECL responsible for supplying isotopes to MDS Nordion and for the construction and operation of two MAPLE reactors and a processing facility at AECL's Chalk River Laboratory (CRL). MDS Nordion is owned by MDS Inc., a Canadian publicly owned company.

3. The purpose of this Affidavit is to provide further information with respect to the schedule for the construction and operation of the MAPLE reactors for the production of medical isotopes. Delay in the schedule for the two MAPLE reactors will substantially increase the risk

of disruption in the supply of life-saving radiopharmaceuticals to the United States, as well as other countries. Over 15 million diagnostic non-invasive imaging procedures are performed each year worldwide, the majority using MDS Nordion medical isotopes that are produced by AECL.

4. As indicated in my Affidavit of January 30, 1998, the Atomic Energy Control Board (AECB) has required that AECL perform irradiation tests on the high enriched uranium (HEU) dioxide targets which are to be used to produce medical isotopes in the MAPLE reactors, which will be fueled with low enriched uranium (LEU). These tests must be completed before the construction of the LEU-fueled MAPLE reactors can be completed. Pursuant to an agreement with the AECB, AECL has committed to completing these tests and providing technical documentation to the AECB by October 1998. In order to meet this schedule, the HEU dioxide targets must be delivered to the Chalk River Laboratory (CRL) site by the end of this month (May 1998). The irradiation tests to be performed are on the "critical path," and therefore, any delay in the arrival of the HEU dioxide targets at CRL beyond May 1998 will result in a concomitant delay in the construction of the MAPLE reactors.

5. The construction and completion of the MAPLE reactors is of critical importance to assure the reliable supply of radiopharmaceuticals that are vital to the public health. These new reactors, which are small and highly specialized, will be dedicated solely to the production of Molybdenum 99 (Mo-99) and other medical isotopes, including Iodine-131, Xenon-133 and Iodine-125. These reactors will assure a reliable supply of medical isotopes to hospitals and medical clinics in North America for at least the next 20 years.

6. Mo-99 is the most widely used radioisotope in nuclear medicine today. Each day, an estimated 50,000 medical patients benefit from diagnostic procedures using radiopharmaceuticals made using Technetium-99m (Tc-99m), which is derived from Mo-99. Tc-99m-based radiopharmaceuticals help detect tumors in the body and provide an assessment of organ functions. Such radiopharmaceuticals are required for 80 percent of nuclear medicine diagnostic imaging procedures and assist in the diagnosis of problems in many parts of the body, including the brain, heart, lungs, liver, thyroid, kidneys and bone. A reliable supply of Mo-99 reduces the need for costly, invasive surgery for medical diagnoses of many illnesses.

7. Currently, AECL produces Mo-99 at its NRU reactor at CRL. MDS Nordion's customers refine Tc-99m, which has a half life of six hours, from Mo-99, which has a half life of 66 hours. Because of this short half life, the supply of Mo-99 must be continuous. A shutdown of the NRU reactor for more than 5 days would disrupt the supply of Mo-99 and jeopardize the availability of Tc-99m.

8. The two MAPLE reactors will provide a much more reliable supply of Mo-99 than the NRU reactor. The timely construction and operation of these two new, specialized reactors plays an integral role in assuring the reliable supply of Mo-99. The first of the MAPLE reactors is scheduled to begin operation in 1999 and the second unit one year later.

9. Any significant delay in the schedule for the completion of the MAPLE reactors substantially increases the risk of a disruption in the supply of Mo-99. In contrast to the

increased reliability and flexibility afforded by the two, new MAPLE reactors, the NRU reactor started operation in 1957 and is now AECL's sole source for medical isotope production. This unit is operating safely and reliably with a sustained capacity factor of more than 80%. The existing maintenance schedule and the current upgrade program for the NRU reactor should assure the safe and reliable supply of Mo-99 into the year 2000. However, it must be acknowledged that the NRU unit cannot be expected to continue to operate indefinitely without there being an increased risk of an extended shutdown. The supply of medical isotopes will necessarily be disrupted if the NRU reactor were required to shut down for more than 5 days before the first MAPLE reactor begins commercial operation.

10. Approximately 150 personnel are currently working on the MAPLE project, including 80 AECL engineers and a number of support staff and contractors. Any significant delay in the MAPLE project could require a partial or substantial de-mobilization of these professionals, without any guarantees that these personnel could easily be re-mobilized. AECL estimates that the economic impact of each month of delay in the MAPLE project will increase the costs of the project by more than $1 million, *i.e.*, more than $30,000 per day.

Jean-Pierre Labrie, Ph.D.
General Manager - Isotope Business
Atomic Energy of Canada Ltd.

Subscribed and sworn to before me this 7th day of May 1998.

Notary Public

CERTIFICATE OF SERVICE

I hereby certify that on May 8, 1998, copies of letter dated May 8, 1998, to the Secretary of the Commission transmitting Affidavit of Dr. Jean-Pierre Labrie dated May 7th, 1998, Dr. Labrie's Affidavit, and this Certificate were served by hand delivery, on the following:

Executive Secretary
U.S. Department of State
Washington, DC 20520

Chairman Shirley A. Jackson
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Commissioner Greta J. Dicus
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Commissioner Nils J. Diaz
U.S. Nuclear Regulatory Commission
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Commissioner Edward McGaffigan, Jr.
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attention: Rulemaking and Adjudications Staff
(Original plus two copies)

Office of the General Counsel
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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James A. Glasgow

May 8, 1998