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November 9, 1978

In Reply
Refer To: IEL-892

XSNM 11410
11000315

X Ref
ISNM 28023
1100316

Mr. Gerald G. Oplinger, Assistant Director
Export/Import & International Safeguards
Office of International Programs
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Extraordinary Request for Special Nuclear Material Import and
Export authority.

References: (a) Application for Export License, ltr IEL-875, dated
1/13/78.

(b) Export License No. XSNM-1150, issued Sept. 28, 1977,
expired Oct. 1, 1978.

Dear Mr. Oplinger:

General Atomic has need for special license authority to import three Model 110 standard FLIP TRIGA fuel elements and to reexport in their place three Model 210 TRIGA instrumented FLIP elements containing an equivalent type and quantity of SNM. The country involved is Mexico.

The TRIGA Mark III Reactor at Salazar, Mexico, is a pulsing reactor operated at a steady state power of one megawatt and is in the process of upgrading to a power level of two megawatts. The reactor is Mexico's principal source of medical isotopes and is a major facility for other nuclear research and training. Reliable operation of the facility is essential. Future operations of the facility are jeopardized by the lack of required instrumentation.

One of the controlling safety parameters for pulsing TRIGA reactors is fuel temperature, thus the reactor's license imposes the measurement of fuel temperatures. This measurement of fuel temperature is accomplished by monitoring the output from thermocouples embedded in the fuel materials of specially instrumented fuel elements. Each instrumented element contains three thermocouples, one of which is used to measure the element's temperature while the other two remain as spares. Reactor operations typically require the monitoring of fuel temperatures on two independent channels and often are done in two fuel element locations.

Recognizing the necessity for proper monitoring of the reactor's fuel temperatures, four thermocouple instrumented elements were included on a fuel order entered into with Mexico. This order became the basis for General Atomic's application for SNM export license, Ref. (a), pending since January 13, 1978.

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to understand the license application, ref. (a), must undergo further processing prior to issuance of the license.

We were recently informed by Dr. Arnulfo Morales, manager of Reactor Operations of the Mexico TRIGA, that five of six thermocouples in their two instrumented elements have failed, leaving only one thermocouple still operable. This places continued reactor operations in a very marginal situation. When the last remaining thermocouple fails, the reactor will be required to shut down until new instrumented elements can be installed in the core. Mexico has no additional elements on hand.

In an attempt to alleviate this critical situation, Dr. Morales has withheld three of the previously shipped TRIGA FLIP elements from insertion into the reactor's core, while exploring the possibility that General Atomic and finally the United States Government might permit the simple exchange of these three elements for three of the four previously ordered elements originally scheduled to be exported under the export license application, Ref. (a). General Atomic intends to participate in this exchange subject to receiving appropriate license authority from your office.

We believe that such special license authority could be given allowing the exchange without the normal considerations applied to a new export enlarging the supply to a foreign country. The exchange will have no adverse impact upon fuel supply agreements, non-proliferation agreements or any safeguards implications. In fact, General Atomic believes that the exchange must be permitted with minimum delay in the furtherance of our international cooperation with Mexico and to assure the continued safe operation of reactors and reactor technology developed within the United States.

The Uranium and U-235 (580 g and 406 g respectively) contained in the three elements currently in Mexico is slightly greater than the amounts in three typical instrumented elements which would be sent from San Diego in the exchange with the result that there would be a very slight reduction (within 2% as U-235) in the total SNM inventory in Mexico. All the Uranium is enriched in U-235 to 70%. The exchanged material will have only an insignificant variation of this enrichment, i.e., a few hundredths of a percent. It is anticipated that the elements to be reimported into the U.S. will merely be held with the remaining account of materials which are currently fabricated and are awaiting export license authority allowing their shipment. To assure that the inventory of material in Mexico will not be increased, arrangements will be made to import into the United States the three elements prior to the export of the instrumented elements.

General Atomic believes that special consideration to this request for exchange retransfer authority should be granted for the reasons stated above.

In order to avert a prolonged shutdown of the reactor with the resultant deleterious effects on the welfare of our neighboring country, we request license authorization to make this fuel exchange. Accordingly we will import

