~~CONFIDENTIAL~~

October 26, 1978

SECY-78-360

COMMISSIONER ACTION

For: The Commissioners

From: James R. Shea, Director
Office of International Programs

Thru: for Executive Director for Operations

Subject: SAFEGUARDS ARRANGEMENT FOR HEU TO ROMANIA
(SECY 78-360)

Purpose: To request that the Commission approve issuance of export license XSNM-885, and associated conditions for pre-irradiation verification and accounting.

Discussion: The staff has received the attached letter (Appendix A) from L. Nosenzo (State) in response to our letter of September 5, 1978 (Appendix B) concerning safeguards arrangements for the highly enriched uranium proposed to be exported to Romania under license application XSNM-885.

Mr. Nosenzo states that the facility attachment for the TRIGA reactor in which this fuel is to be used has now been completed.

The letter proposes two alternative methods to ensure accounting for the fuel upon its arrival in Romania. Under both of these alternatives, seals would be affixed to the fuel containers by the U.S. Government before their shipment from General Atomic. If IAEA seals are used, (Alternative I), the Agency would

Contact:
G.G. Oplinger
492-7866

Classified by Gerald G. Oplinger
(name)
Assistant Director, IPEI
(title)

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assume responsibility for accounting for the material thereafter. If US seals were used, (Alternative II), they would be replaced with IAEA seals by an Agency inspector after arrival in Romania. In either case, the IAEA seals would thereafter be verified by IAEA inspectors "at frequencies commensurate with the IAEA's verification objectives for the type of material on hand at the time, until the fuel is loaded into the reactor." The letter notes that GOV/1911 establishes a detection time of one to three weeks as the Agency's verification objective for a quantity of "safeguards significance" of 25 kgs U-235 in HEU, and says that it is State's understanding that the Agency plans to have its inspectors present at the time the fuel is loaded into the reactor.

The letter (Appendix A) also indicates that State is discussing with the IAEA its preference between the two alternatives, but does not explicitly say whether the Agency has accepted either of them. In response to the staff's inquiry on this point, Hoyle (State) said that the Agency itself has proposed Alternative II, that State suggested Alternative I, and that the Agency is presently considering its preference.

The staff believes that either alternative is acceptable and would meet the concerns which the NRC has raised concerning the pre-irradiation protection of this fuel. NMSS believes Alternative I is more straightforward and more easily administered than Alternative II, but has no strong preference.

Attached (Appendix C) are two recent cables which stress the urgency of prompt action on this pending export.

Recommendation: The staff recommends: (a) that the Commission approve a response to Mr. Nosenzo along the lines of the draft letter at Appendix D, and (b) that the Commission expeditiously authorize issuance of the export license as soon as General Atomic and the IAEA have confirmed the acceptability of either of these alternatives. The license would be conditioned upon the affixing of seals to the containers under NRC supervision prior to shipment from General Atomic.

Coordination: NMSS concurs. ELD has no legal objection.

James R. Shea, Director
Office of International Programs

Enclosures:
1. Appendix A - Ltr from Nosenzo to Shea dtd 10/12/78
2. Appendix B - Ltr from Chairman Hendrie to Nosenzo dtd 9/5/78
3. Appendix C - Cable Bucharest #7129 dtd 10/6/78 (CONF.) Cable Vienna #9205 dtd 10/12/78 (CONF.)
4. Appendix D - Proposed ltr to State

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. Wednesday, November 1, 1978.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT October 30, 1978, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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GENERAL ATOMIC

IAL ATOMIC COMPANY
)X 81608
EGO, CALIFORNIA 92138
55-3000

October 5, 1978

Dixon Hoyle
ctor
ce of Program Implementation
7830
rtment of State
ington, D.C. 20520

Mr. Hoyle:

ccordance with our discussion yesterday, enclosed are 3 copies of drawings of fuel shipping containers and container licenses. There be 60 of these containers shipped to Romania. Our approximate dule is to initiate shipments starting approximately one week after ipt of the export license and making a shipment once a week for eeks. The first 2 shipments will be of 12 containers each and will ain the 20% enriched material used in the Annular Core Pulsing Reactor. next 9 shipments will be in groups of 4 containers and will contain 93% enriched material used in the 14 MW reactor. The shipment of ntainers will result in less than 5 kg of HEU being shipped at any time.

ral Atomic does not have any objection to a government agency applying iditional seal to these shipping containers. The General Atomic seal pplied across the bolted joint which attaches the barrel cover to barrel with the closure ring. Our only condition is we will appreciate the government agency be prepared to apply the seals upon short notice hat the fuel shipments are not unduly delayed.

Very truly yours,

George C. Law
Project Manager
TRIGA Reactor Division

lvg
osures: IAEA Cert. of Competent Authority #9034 (3)
" " " " " #9037 (3)
Drawing #TOS396C160 (3)
" #TOS396C161 (3)

DEPARTMENT OF TRANSPORTATION
MATERIALS TRANSPORTATION BUREAU
WASHINGTON, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY

Fissile Radioactive Material Package Design

Certificate Number USA/9034/AF
(Revision 1) (Type A)

This establishes that the packaging design described herein, when loaded with the authorized radioactive contents, has been certified by the National Competent Authority of the United States as meeting the regulatory requirements for packaging for fissile radioactive materials as prescribed in IAEA[1] Regulations and 88 49 CFR 173.393a, b and 173.396(b)(4) of the USA[2] Regulations for the transport of radioactive materials.

I. Package Identification - General Atomic Company Model TRIGA 1.

II. Packaging Description - Packaging authorized by this certificate consists of an outer steel drum approximately 22-1/2" in diameter and 36" high, meeting the requirements of DOT Spec 6J with an inner vessel which is a 5-inch diameter schedule 40 carbon steel pipe with a threaded cap closure centered and supported by eight spacer rods with vermiculite insulation in the void between inner and outer vessel.

III. Authorized Radioactive Contents - The authorized contents consists of fissile radioactive material as clad fuel elements containing not more than 1.95 kilograms of Uranium-235 as further limited in U. S. Nuclear Regulatory Commission Certificate 9034 (Appendix A).

Shipment is authorized as Fissile Class II with a minimum Transport Index of 2.7 assigned to each package.

IV. General Conditions -

a. Each user of this certificate must have in his possession a copy of this certificate.

b. Each user of this certificate, other than General Atomic Company, San Diego, California shall register his identity in writing to the Office of Hazardous Materials Operations, Materials Transportation Bureau, U. S. Department of Transportation, Washington, D. C. 20590.

c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.

V. Marking and Labeling - The package must also bear the marking USA/9034/AF as well as the other marking and labels prescribed by the USA Regulations.

VI. Expiration Date - This certificate, unless renewed, expires on March 31, 1980.

This certificate is issued in accordance with the requirements of the IAEA and USA Regulations and in response tc the April 7, 1975 and February 22, 1978 petitions by General Atomic Company, San Diego, California and in consideration of the associated information provided in U. S. Nuclear Regulatory Commission Certificate 9034 (Appendix A).

Certified by:

A W Grella

March 27, 1978
(DATE)

A. W. Grella
Chief, Technology Division
Office of Hazardous Materials
Operations
Materials Transportation Bureau
U. S. Department of Transportation
Washington, D. C. 20590

[1]"Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials," 1967 Edition published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

[2]Title 49, Code of Federal Regulations, Parts 100-199, USA.

Revision 1 issued to extend expiration date.

tificate Number	1b. Revision No.	1c. Package Identification No.	1d. Page No.	1e. Total No. Pa
9034	0	USA/9034/AF	1	2

EAMBLE

a. This certificate is issued to satisfy Sections 173.393a, 173.394, 173.395, and 173.396 of the Department of Transportation Hazardous Materials Regulations (49 CFR 170-189 and 14 CFR 103) and Sections 146-19-10a and 146-19-100 of the Department of Transportatio Dangerous Cargoes Regulations (46 CFR 146-149), as amended.

b. The packaging and contents described in item 5 below, meets the safety standards set forth in Subpart C of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions."

c. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

s certificate is issued on the basis of a safety analysis report of the package design or application—

Prepared by *(Name and address)*:

General Atomic Company
P.O. Box 81608
San Diego, California 92138

(2) Title and Identification of report or application:

General Atomic Company application dated December 26, 1974, as supplemented.

(3) Docket Number 71-9034

INDITIONS

This certificate is conditional upon the fulfilling of the requirements of Subpart D of 10 CFR 71, as applicable, and the conditions specified n Item 5 below.

scription of Packaging and Authorized Contents, Model Number, Fissile Class, Other Conditions, and References:

(a) Packaging

(1) Model No.: TRIGA 1

(2) Description

TRIGA fuel element shipping container. The outer packaging is fabricated to DOT Spec. 6J requirements. The outer dimensions are approximately 22.5 inches in diameter by 36 inches high. The inner vessel is a 5-inch Schedule 40 carbon steel pipe. Dimensions of the inner vessel are approximately 31 inches in height with a 1/4-inch-thick wall and a 5-inch inside diameter. The top of the inner vessel is a threaded pipe cap and the bottom is a welded 1/4-inch-thick flat disc. The inner vessel is centered and supported within the outer packaging by eight 3/8-inch-diameter braced, support spacer rods. The void between the inner vessel and the outer packaging is filled with vermiculite tamped to a minimum density of 4.5 lbs/ft^3. Maximum gross weight including contents is approximately 235 pounds.

5. (a) Packaging (continued)

(3) Drawing

The packaging is constructed in accordance with the General Atomic Company Drawing No. TOS396C160, Rev. 0.

(b) Contents

(1) Type and form of material

TRIGA fuel elements containing uranium-zirconium-hydride or erbium-uranium-zirconium-hydride and clad with stainless steel, aluminum, or Incoloy. The Zr to H atomic ratio within the fuel meat shall not exceed 1.65.

(2) Maximum quantity of material per package

1.95 kg U-235 contained within twenty-five (25) fuel elements.

(c) Fissile Class II

Minimum transport index to be shown on label for Class II 2.7

6. The package authorized by this certificate is hereby approved for use under the general license provisions of Paragraph 71.12(b) of 10 CFR Part 71.

7. Expiration date: March 31, 1980.

REFERENCES

General Atomic Company application dated December 26, 1974.

Supplement dated February 7, 1975.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Charles E. MacDonald, Chief
Transportation Branch
Division of Materials and
Fuel Cycle Facility Licensing

APPENDIX B

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CHAIRMAN

September 5, 1978

Mr. Louis V. Nosenzo
Deputy Assistant Secretary for Nuclear
Energy and Energy Technology Affairs
Room 7830
Department of State
Washington, D.C. 20520

Dear Mr. Nosenzo:

In considering license application XSNM-885, involving the proposed export of highly-enriched uranium fuel to Romania, the Commission wishes to ensure that criterion one is met and that a finding of non-inimicality in this case is justified. The staff has already communicated to you our concern about the fact that no facility attachment on specific safeguards arrangements has yet been concluded between the IAEA and Romania with respect to the TRIGA research reactor. It is our understanding that you are presently seeking information concerning the facility attachment situation, and will inform us when an agreement is reached.

In addition, information available to the Commission at present does not appear to establish clearly what safeguards or other protective measures would be applied to this material from the time of its receipt in Romania until it is loaded into the reactor and irradiated. As we understand the situation, delivery of the fuel will be spread over at least ten weeks, and then, depending on the availability of General Atomic personnel, the actual date of start-up of the reactor could be delayed until the first part of next year. It would be helpful if we could receive information on specific measures which will be taken to help ensure timely detection of any possible diversion of material during this period. In particular, is it known whether the IAEA intends to carry out any inspection or verification measures during this period? Since similar questions could arise in connection with future exports, it would also be helpful if you could provide us with information concerning what IAEA inspection and other safeguards measures are routinely initiated upon receipt of the transferred item to achieve timely warning.

U.S. NRC Declassification Review

1ST REVIEW – DATE: 6/9/2025 REVIEWER 3591 AUTHORITY: ☐ DC ☑ DD 2ND REVIEW – DATE: 6-9-2025 REVIEWER 3470 AUTHORITY: DD	DETERMINATION (CIRCLE NUMBER(S)) 1. CLASSIFICATION RETAINED 2. CLASSIFICATION CHANGED TO: ____ 3. CONTAINS NO NRC CLASSIFIED INFO 4. COORDINATE WITH: ____ (5.) DECLASSIFIED 6. CLASSIFIED INFO BRACKETED 7. OTHER (SPECIFY):

We would appreciate being informed of the views of the Executive Branch as to what safeguards measures might be considered in order to provide for inspection during the interim period between fuel delivery and loading should the IAEA not plan to undertake such inspection of Romania's TRIGA reactor.

Sincerely,

Joseph M. Hendrie

APPENDIX C

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:-09

01 EUR-12 ISO-00 ACDA-12 CIAE-00 INR-10 IO-14
NSAE-00 NSC-05 EB-08 NRC-05 SOE-02 DODE-00
15 SS-15 SP-02 CEQ-01 PM-05 SAS-02 /121 W
----------077635 090532Z /12

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E WASHDC 2006
VIENNA

D E N T I A L BUCHAREST 7129

: GDS
G, TECH, AU, IAEA, RO
EXPORT LICENSE FOR ROMANIAN TRIGA FUEL

STATE 214129, (B) BUCHAREST 5954.
STATE 233722, (D) BUCHAREST 6402,
STATE 24011, (F) VIENNA 08592,
BUCHAREST 6751, (H) VIENNA 08712,
STATE 250333

OR OF FOREIGN RELATIONS, ROMANIAN STATE
FOR NUCLEAR ENERGY, IONESCU CONVOKED SCIENCE
TOBER 6 TO OFFICIALLY INFORM U.S. THAT
CILITIES ATTACHMENT HAD ENTERED INTO FORCE
2. IONESCU STATED THAT ROMANIA HAD
ITH ALL U.S. AND IAEA REQUIREMENTS FOR
E EXPORT LICENSE AND GOR CANNOT UNDERSTAND
E HAS NOT BEEN ISSUED. THE RESEARCH
FULLY COMPLETED AND ONLY FUEL ASSEMBLIES
ED TO BEGIN WORK. HE SAID THAT AT THIS
IS BEGINNING TO SUSPECT THAT DELAYS ARE
. RATHER THAN TECHNICAL AND THAT TRIGA
COULD BECOME DISTRUPTIVE ELEMENT IN OTHER-
ENT U.S. - ROMANIAN RELATIONS. ROMANIAN
WILL BE INSTRUCTED TO PRESS THIS ISSUE
ID OTHER CONCERNED U.S. AGENCIES, AND
(ED THAT EMBASSY ALSO CONVEY SERIOUS CON-
R ABOUT INORDINATE DELAY IN ISSUING EXPORT
R TRIGA FUEL.

I ALSO ELABORATED ON "FORCE MAJEURE" ISSUE
ON WITH GENERAL ATOMIC'S PREPARATION OF
IE REACTOR. HE SAID THAT GOR STILL DOES
' GA HAS SUPPLIED WRITTEN CERTIFICATION OF
: QUANTITY AND ENRICHMENT OF THE FUEL
) IAEA AND DEPARTMENT OF ENERGY AS CALLED
(RTICLE 1, SECTION 3, PARA (B) OF THE
SUPPLY AGREEMENT OF 12 JUNE 1974, AND,
OF THE EXPORT LICENSE IS BEING DELAYED
S INFORMATION IS LACKING, THEN GENERAL
ESPONSIBLE RATHER THAN THE GOR.

. IN COURSE OF DISCUSSION, IONESCU
AT GENERAL ATOMIC HAD FIRST RAISED "FORCE
SUE, CONTENDING THAT DELAYS IN ISSUANCE OF
NSE WERE BEYOND GENERAL ATOMIC'S CONTROL,
ORE, THE COMPANY COULD NOT BE SUBJECT TO
USES IN CONTRACT. IT WOULD NOW APPEAR
MANEUVERING TO OFFSET GENERAL ATOMIC'S
URE" POSITION , AND TO PROTECT ITS ABILITY
ENALTIES IF NECESSARY, BY TRYING TO DIRECTLY
N APPROVAL OF THE EXPORT LICENSE BY NRC
ATOMIC'S FAILURE TO SUPPLY REQUIRED INFOR-
IMELY WAY. END COMMENT.

4. SCIENCE ATTACHE POINTED OUT THAT ACCORDING TO INFORMATION AVAILABLE TO THE EMBASSY, GENERAL ATOMIC HAS FABRICATED FUEL READY FOR SHIPMENT AS SOON AS LICENSE APPROVED, AND COMPANY HAS PRESSED HARD FOR APPROVAL OF EXPORT LICENSE. MOREOVER, GENERAL ATOMIC HAS AGREED TO SEND FUEL QUANTITY AND ENRICHMENT INFORMATION TO IAEA DEPUTY DIRECTOR FOR SAFEGUARDS IN VERY NEAR FUTURE, THOUGH THIS GENERALLY IS NOT DONE UNTIL FUEL IS SHIPPED. SCIENCE ATTACHE ALSO STATED THAT TO BEST OF HIS KNOWLEDGE, THERE IS NO DIRECT CAUSE AND EFFECT RELATIONSHIP BETWEEN COMPLETION OF F/A AND ISSUANCE OF LICENSE, THOUGH THIS QUESTION HAS BEEN RAISED IN GENERAL WAY BY NRC COMMISSIONERS WHILE STUDYING THE CASE. MENTION WAS ALSO MADE THAT THERE WAS SOME DISCUSSION ABOUT SAFEGUARDING FUEL DURING SHIPMENT, BUT THIS PRIMARILY IS A TECHNICAL PROBLEM INVOLVING IAEA AND GENERAL ATOMIC AND WAS IN PROCESS OF BEING WORKED OUT.

5. EMBASSY WOULD APPRECIATE UPDATE ON STATUS OF EXPORT LICENSE FOR TRIGA FUEL AS SOON AS POSSIBLE.
AGGREY

~~CONFIDENTIAL~~ INCOMING

Department of State TELEGRAM

PAGE 01 VIENNA 09205 120945Z 1374
ACTION OES-09

INFO OCT-01 EUR-12 ISO-00 ACDA-12 CIAE-00 INR-10 IO-14
L-03 NSAE-00 NSC-05 EB-08 NRC-05 DODE-00 SS-15
SP-02 CEQ-01 PM-05 SAS-02 /104 W
122404 131340Z /40

R 120939Z OCT 78
FM AMEMBASSY VIENNA
TO SECSTATE WASHDC 8357
INFO AMEMBASSY BUCHAREST
USDOEHQ FORRESTAL WASHDC
USDOEHQ GERMANTOWN

~~C O N F I D E N T I A~~ L VIENNA 09205

USIAEA

E.O. 11652: GDS
TAGS: IAEA, TECH, ENRG, RO
SUBJECT: EXPORT LICENSE FOR ROMANIAN TRIGA FUEL

REFERENCE: BUCHAREST 7129

1. BASED ON DISCUSSIONS WITH ROMANIAN REP BOHOARA, WITH WHOM MISOFF HAS VERY CORDIAL AND FRANK RELATIONS, IT IS CLEAR THAT ROMANIANS HAVE REACHED A STATE OF COMPLETE EXASPERATION OVER THE QUESTION OF THE EXPORT LICENSE FOR ROMANIAN TRIGA FUEL. IN INFORMING MISOFF THAT FACILITY ATTACHMENT HAD BEEN COMPLETED AND ENTERED INTO FORCE, HE WONDERED WHAT NEW "CONDITION" THE U.S. MIGHT REQUIRE NEXT?

2. IONESCU AND BOHOARA HAD ALSO APPEALED TO MISOFF DURING GENERAL CONFERENCE RECENTLY HELD IN VIENNA TO HELP, IF POSSIBLE, OBTAIN THE NECESSARY EXPORT LICENSE FOR THEIR FUEL. MISOFF SENSED AT THAT TIME THAT THE MATTER HAD ALREADY BEGUN TO CAUSE SERIOUS CONCERN IN ROMANIA.

3. FYI. MISSION NOTES THAT FAILURE TO APPROVE THIS EXPORT LICENSE FOR ROMANIA COULD HAVE VERY SERIOUS IMPLICATIONS VIS-A-VIS IAEA, SINCE THE MATERIAL IS TO BE PROVIDED PURSUANT TO A SUPPLY AGREEMENT THROUGH IAEA UNDER THE U.S.-IAEA AGREEMENT FOR COOPERATION. END FYI. KIRK

APPENDIX D

[DRAFT]

~~CONFIDENTIAL~~

Mr. Louis V. Nosenzo
Deputy Assistant Secretary for Nuclear
Energy and Energy Technology Affairs
U.S. Department of State
Washington, D.C. 20520

Dear Mr. Nosenzo:

Thank you for your letter of October 12, 1978, concerning arrangements for the protection of highly enriched uranium fuel proposed to be exported to Romania under license application XSNM-885.

The Commission has considered the alternative methods proposed in your letter for sealing the fuel. While either of these alternatives would be satisfactory, the Commission believes that Alternative I would be more straightforward and somewhat easier to administer from the NRC's viewpoint. The staff has been authorized to issue the proposed export license as soon as you have notified us which of the two procedures is preferred by the IAEA.

In approving issuance of this license, the Commission attaches particular importance to the assurance contained in your letter that under either alternative, IAEA seals would be verified by IAEA inspectors while the fresh highly enriched uranium is present in Romania at frequencies commensurate with the IAEA's verification objectives for this type of material (i.e., one to three weeks for quantities in excess of 25 kilograms of U-235 in HEU).

Sincerely,

James R. Shea, Director
Office of International Programs

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APPENDIX D