

ADJUDICATORY ITEM
CONSENT CALENDAR ITEM

July 30, 1980

SECY-A-80-111

OFFICIAL USE ONLY

For: The Commissioners
From: Leonard Bickwit, Jr.
General Counsel
Subject: FOIA APPEAL, 80-A-27

Discussion:

(an employee in the NRC Cashier's Office) filed an FOIA request on June 13 for a copy of an OIA investigation report concerning an \$80.00 cash shortfall in the Cashier's Office (Attachment 1). Her request was denied by James Cummings, Director of OIA, based upon Exemptions 6 and 7(A,C,E) to the FOIA (Attachment 2). She has appealed this denial to the Commission (Attachment 3).

The report at issue is entitled "Destruction of Records and Missing Funds in the Division of Accounting, Office of the Controller" (Attachment 4).

Contact: William M. Shields, CGC
x43224

9401270010 930526
PDR FOIA
GILINSK92-436 PDR

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions S, b+7C
FOIA- 92-436

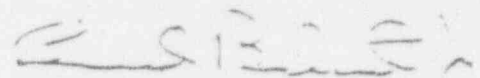
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11

5

In our view

Recommendation:


Leonard Bickwit, Jr.
General Counsel

Attachments:

- 6
1. ~~FOIA~~ FOIA Request of June 13
 2. OIA Denial of FOIA Request
 3. ~~Appeal~~ Appeal of Denial
 4. Report "Destruction of Records and Missing Funds in the Division of Accounting, CON"
 5. Draft response to _____

Commissioners' comments or consent should be provided directly to the Office of the Secretary by c.o.b. Wednesday, August 13, 1980.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT August 6, 1980, 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.

This paper is tentatively scheduled for affirmation at an Open Meeting during the Week of August 18, 1980. Please refer to the appropriate Weekly Commission Schedule, when published, for a specific date and time.

DISTRIBUTION

Commissioners
Commission Staff Offices
Secretariat

ATTACHMENT 1



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

June 13, 1980

①
release

Mr. Felton, 4210 MNBB:

Pursant to the Freedom of Information Act, I request a complete copy of the Office of Inspector and Auditor's report on the findings of their investigation concerning \$80.00 missing from the Cashier's Office in Division of Accounting.

In May 1978, there was a shortage of \$80.00. A traveler repaid \$80.00 for travel advance and received a receipt. There was no record of the money being returned. Receipt No.605 in the receipt book and the receipt showing the \$80.00 repaid did not match, receipt No.605 also. It was noticed that a page was torn from the receipt log and the first two receipts appear to have been rewritten.

I was working in the cashier's office at the time and I was interviewed by OIA.

Please contact me for my personal pickup.

FREEDOM OF INFORMATION
ACT REQUEST

Thank You,

*FOIA-80-310
rec'd 6-16-80*

6

ATTACHMENT 2

ATTACHMENT 2

②
release

July 11, 1980

MEMORANDUM FOR:

6

FROM:

James J. Cummings, Director
Office of Inspector and Auditor *jc*

Original Signed by
Roger Fortuna

SUBJECT:

FOIA 80-310

This memorandum responds to your request of June 13, 1980, pursuant to the Freedom of Information Act (FOIA) for "a complete copy of the Office of Inspector and Auditor's report on the findings of their investigation concerning \$80.00 missing from the Cashier's Office in Division of Accounting."

Although we have provided NRC management with a report of the information developed to date, the investigation remains in pending status because the matter has not been resolved. The report is therefore withheld in its entirety from public disclosure pursuant to Exemption 7(A) to the FOIA, in that its release would interfere with an ongoing law enforcement proceeding. In addition, portions of the report contain information the release of which would cause an unwarranted invasion of the privacy of individuals; these portions are withheld pursuant to Exemptions 6 and 7(C) to the FOIA. Finally, portions of the report are covered by Exemption 7(E) to the FOIA, in that their release would disclose investigative techniques and procedures, thus interfering with the conduct of future investigations. Your request for the report is denied.

This completes action on your request. I am the denying official of the documents withheld in this request. This denial may be appealed directly to the Commission within 30 days of its receipt, pursuant to 10 CFR 9.15. Any such appeal must be in writing, addressed to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 and should clearly state on the envelope and in the letter that it is an "Appeal from an Initial FOIA Decision."

ATTACHMENT 3



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

①
Wheat

July 22, 1980

APPEAL OF INITIAL FOIA DECISION

80-A-27c (80-3)

REC'D 7-23-80

Memorandum For: Secretary of the Commission

From:

Subject: Appeal from an Initial FOIA Decision - FOIA 80-310

I wish to appeal the denial of my request for a copy of the Office of Inspector and Auditor's report on the findings of their investigation concerning \$80.00 missing from the Cashier's Office in Division of Accounting in May of 1978.

On August 13, 1979, I was interviewed by _____ of OIA. The interview started by _____ reading me my rights. In the course of the interview, I was told that I was a suspect of theft, fraud and possible forgery. Handwriting samples were taken and sent to the FBI.

On December 21, 1979, I went back over to OIA for more handwriting samples to be taken for the FBI.

My concern is that I would like my name cleared. I am interested to know what was found on me and a copy of what I said at the interview - which I was told I would receive.

If this information is not available at the present time because of "an ongoing law enforcement proceeding" then I request that you give me a written memo stating this fact and tell me approximately when I may receive this information. My ultimate goal is to clear my good name.

cc:

OIA

ATTACHMENT 4

rebar



REPORT OF INVESTIGATION

TITLE: DESTRUCTION OF RECORDS AND MISSING FUNDS IN THE DIVISION OF ACCOUNTING, OFFICE OF THE CONTROLLER:

DATE: JUN 9 1980

INVESTIGATOR(s):

76

This information should not be included in the Public Document Room or incorporated in any other file system. Subsequent to appropriate review and/or action the document is subject to the described provisions.

- A. Final report submitted for review/action.
- B. Pending report submitted for review/action.
- C. Information of official interest, no action required.
- D. Return to OIA in described time (days).
- E. Return via mail - TO BE OPENED BY ADDRESSEE ONLY.
- F. No reproduction of attached document permitted.

CAUTION

Requests for the disclosure of the attached document(s) must be referred to the Director, Office of Inspector and Auditor.

OFFICE OF INSPECTOR & AUDITOR
U. S. NUCLEAR REGULATORY COMMISSION

FREEDOM OF INFORMATION/PRIVACY ACT EXEMPTION ..(b)(6)&(7) & (k)

~~OFFICIAL USE ONLY~~

7C

SYNOPSIS

On June 29, 1979, the Director, Division of Accounting (DA), Office of the Controller (CON), advised the Office of Inspector and Auditor (OIA) of an \$80 shortage in DA funds which was discovered while an NRC employee was settling his travel account prior to his June 1979 resignation. OIA review of appropriate records indicated that DA issued two receipts #605: one to [redacted] in the amount of \$80 of which was dated June 14, 1978, and the second to another employee in the amount of \$50 which was dated June 20, 1978. DA records did not show that the \$80 had ever been received even though [redacted] produced a copy of the receipt confirming his \$80 payment. It appears that the page of DA's cash receipt book containing the carbon copy of the \$80 receipt was torn out - presumably to conceal the \$80 loss. (The \$50 was appropriately handled and is not at issue here.)

During OIA's interviews cashiers who served during June 1978 disclaimed having knowledge of who ripped the page from the receipt book or what may have happened to the \$80. The cashier whose signature appears on the first receipt #605 (the one issued to [redacted] for \$80) advised OIA that she could not specifically recall the transaction.

Background

On June 29, 1979, the Director, DA, informed OIA of an \$80 shortage in DA funds which was discovered while an NRC employee was settling his travel account prior to his June 1979 resignation. Because the shortage could not be resolved, OIA initiated an investigation into this matter.

DETAILS

Review of Records

OIA reviewed appropriate records - the cash receipt book, the cash log, certificates of deposit, travel advance cards. OIA obtained a copy of a receipt (#605 dated June 14, 1978) issued to [redacted] when he paid \$80 toward an outstanding travel advance balance (Attachment 1). Examination of carbon copies of receipts in the cash receipt book, however, revealed that a receipt #605 dated June 20, 1978, was issued to [redacted] for \$50 (see Attachment 2). Review of DA cash logs and certificates of deposit did not show an \$80 collection from [redacted]. Further, review of the travel advance cards of [redacted] and other individuals with the surname [redacted] did not show any collection in the amount of \$80 during June 1978. Examination of the receipt book revealed that the bound page of receipts preceding the page containing receipts numbered 603-606 had been torn out presumably to conceal an \$80 loss. Review of appropriate documents revealed that the \$50 was handled in the proper manner.

OIA obtained the originals of receipts numbered 603-606 issued to:

(Attachments 3 through 6). The FBI Laboratory examined these receipts and determined that the bound copies of #603 and #604 (see Attachment 2) were not carbon copies of the originals (i.e., they were forged). However, they were unable to determine the identity of the individual(s) who rewrote the bound copies of receipts #603 and #604.

Interviews of Former and Current Cashiers

_____ Travel Accounts Unit, Employee Compensation and Travel Accounts Section, Financial Operations Branch, DA, CON, was interviewed on August 13, 1979.

_____ said that she knew that when _____ was settling his travel account in preparation for resignation, someone in the Travel Accounts Unit, advised him he still owed \$80 of an outstanding travel advance. She was also aware that _____ had a receipt (#605) indicating he had returned this money.

_____ said she checked certificates of deposit, advance cards, and the cash receipt book to try to determine what happened to the money; at this point she noticed that the copy of receipt #605 bound in the book was for a different amount (\$50) and was issued to another individual. _____ said she then checked for misnumbered receipts and noticed that a page had been ripped out. She said she then took the book to _____

_____ said she has never ripped out pages from the receipt book and she did not know of any occasion when another cashier did so. _____ said she does not remember rewriting, or being asked to rewrite any receipts.

_____ said that the cashier that started a page in the receipt book usually wrote the numbers on all the receipts on that page. _____ recognized the writing and signature on _____ receipt #605 as hers; however, she said someone else wrote the number on the receipt. _____ similarly acknowledged the writing and signature on #604 (both the original and pink bound copy) to be hers.

_____ Office of Nuclear Regulatory Research (RES), was interviewed on August 13, 1979.

_____ was shown the _____ receipt #605 and the bound pink carbon copy of #605 issued to _____. _____ could not explain the apparent discrepancy. She stated that she personally, never rewrote receipts or tore pages out of the receipt book. _____ added, however, that it was possible that someone could have torn a bound page out of the receipt book if a mistake had been made.

_____ was also shown the pink copy of receipt #603 in the receipt book. She was asked to examine this copy of receipt #603 and to state whether she wrote the receipt. _____ stated that certain parts of the receipt appeared to be her handwriting, but because of the poor quality of the pink carbon copy she could not be certain if it was she who actually wrote this receipt. _____ was certain, however, that she wrote the original of receipt #603. _____ stated that the numbering (603, 604, 605, and 606) on the receipts appeared to be hers. She stated that whoever completed the first receipt on a page usually numbered the remaining receipts on that page.

Division of Organization and Personnel,
Office of Administration, was interviewed on August 14, 1979.

_____ advised that she never tore any of the pink bound copies of receipts from the receipt book. She further stated that she was unaware of anyone ever tearing out a bound page from the receipt book, and she had no knowledge of who tore out the page in question or why.

_____ stated that she could not recall ever rewriting a receipt. She said that if she had to rewrite a receipt, she probably would have written "VOID" on the incorrect one and then would have rewritten the receipt.

_____ reviewed receipt #605 issued to _____ stated that she recalled issuing this receipt because she had gone to school with someone named _____. _____ said, however, that she could not recall how this specific transaction was handled. _____ said she did not rewrite or trace receipts #603 and #604.

General Accounting Section, Financial
Operations Branch, DA, LUN, was interviewed on September 19, 1979.

_____ said that she served as an alternate cashier for about one year ending in mid-June 1978, although she believed she actually did not perform any cashier's duties in June.

_____ said she did not know anything about the missing page from the receipt book. She said she only had limited experience in the cashier's office; however, she had never heard of any prior occasions where receipts had been rewritten or pages torn from the receipt book. She speculated that the page might have been removed after a mistake had been made on a receipt on that page; she quickly added that she felt the proper thing to do in such a situation would be to void the receipt and leave it in the book.

Travel Accounts Unit, Employee Compensation and Travel Accounts Section, Financial Operations Branch, DA, CON, was interviewed on September 19, 1979.

advised that she became an alternate cashier sometime in June or July 1978. She stated that she is still an alternate cashier. She said that she first became aware of the \$80 shortage when [redacted] told her of the situation (shortly after the shortage was discovered). [redacted] stated that she had no knowledge of who tore out the page in the receipt book or why. She believed that if a mistake had been made that "VOID" should have been written on the receipt and a new one prepared. [redacted] added that she believed that tearing a page out of the receipt book would be improper.

INVESTIGATORS' NOTES:

1. A separate OIA inspection report addresses other cash shortages in DA.
2. Handwriting exemplars were obtained from [redacted]. These are being retained by OIA in the event that additional evidence is developed regarding this or other cash shortages.

Attachments:

1. Receipt #605 (issued to [redacted] for \$80)
2. Page fm receipt book containing carbon copies of receipts #603-606
3. Receipt #603 (issued to [redacted])
4. Receipt #604 (issued to [redacted])
5. Receipt #605 (issued to [redacted] for \$50)
6. Receipt #606 (issued to [redacted])

7C

NO. 605

June 14

1978



RECEIVED OF

Eighty

from

100 DOLLARS

Auth 86899

\$ 80.00

B & P. Gibson 730 Dup. 7300 Trip.



RECEIVED OF _____ DOLLARS

\$ _____
R.F. Gibson 730 Dup. 7500 Tra

4/11/20



RECEIVED OF _____ DOLLARS

NO. 604

19__

\$ _____
R.F. Gibson 730 Dup. 7500 Tra

8/15/20



RECEIVED OF _____ DOLLARS

NO. 605

June 20, 19__

Fifty

4,87,554,66

56403

\$ 50.00
R.F. Gibson 730 Dup. 7500 Tra

per ch register 8/18



RECEIVED OF _____ DOLLARS

NO. 606

4/1/1

19__

2141 111 84153

74

NO. 603
6/12 19 78

RECEIVED OF
Twenty four and 86/100 DOLLARS

235-78

\$ 24.86

R.A.P. Green 730 Des. 7300 Trip.

7C

NO. 604

1978

June 14



RECEIVED OF

20/100 DOLLARS

Twenty
auth 86928

\$ 20.00

S.A.P. Green 730 Disp. 7300 Trs.

70

NO. 605

June 20, 1978



RECEIVED OF

Fifty

DOLLARS

100

ch #7,254,661

86402

\$ 50.00

B & P. Gibson 730 Dca. 7300 Tris.

7C

No. 606

6/22/74

19 74



RECEIVED OF

\$ 75.00

DOLLARS

Seventy Five

03/10/1

(Nett. #8715-3)

\$ 75.00

R. & P. Gibson 730 Des. 7300 Tru.

ATTACHMENT 5

May 13, 1980

SECY-80-247

For:

The Commissioners
COMMISSIONER ACTION

From:

James R. Shea, Director
Office of International Programs

Thru:

Acting Executive Director for Operations

Subject:

EXECUTIVE BRANCH RESPONSE ON EXPORT
APPLICATION XSNM01088, HEU FOR IRAN

Purpose:

Commission review of proposed denial of subject
license to General Atomic Company.

Discussion:

By letters dated February 11, 1977 and July 18, 1978
General Atomic Company requested a license authorizing
the export of 24.4 kilograms uranium-235 contained in
26.2 kilograms uranium (93% enriched) for use in the
Tehran Research Reactor.

The requests were forwarded for Executive Branch
review and comment on March 16, 1977 and August 8, 1978.
On April 14, 1980 the Executive Branch returned the
application without action, and (1) concluded that the
requirements of the Atomic Energy Act, as amended by
P.L. 95-242, have not been met in that there is no
Agreement for Cooperation between the United States and
Iran as required by Section 123 of the Act; and (2)
advised that they are unable to make a determination
that the proposed export will not be inimical to the
common defense and security of the United States in view
of current conditions in Iran.

The Executive Branch intentionally chose to return the
application without action. In the absence of an agreement
for cooperation and a finding of non-inimicality, however,
the staff thinks that the license should be denied. State
was advised of the proposed denial and has no objection.
A draft of the proposed denial to the General Atomic
Company is enclosed. This would be the first export
license to be denied by NRC. (Several others have been
returned to the applicants by NRC without action.)

The following documents are enclosed for Commission
review of the subject application: (1) Application of
February 11, 1977 and letter amendment of July 18, 1978
(Appendix A); (2) Executive Branch views of April 14, 1980
(Appendix B); and (3) draft of proposed letter of denial
to General Atomic Company (Appendix C).

Contact:

Betty L. Wright, 49-27984
Neal Moore, 49-27984

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 5

FOIA 92-431

300
8006040250

W. Shea

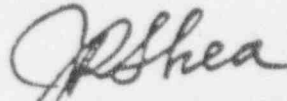
TT2

Recommendation:

That the Commission authorize the denial of the requested export license to General Atomic Company as proposed in the enclosed draft letter to General Atomic.

Coordination:

ELD has no legal objection.



James R. Shea, Director MAY 12 1980
Office of International Programs

Enclosures:— IN B.P.
As Stated

DISTRIBUTION:

Commissioners
Commission Staff Offices
Exec. Dir. for Ops.
SECY

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. Wednesday, May 21, 1980.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT May 19, 1980, 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.

XSLM 1188
S-615

APPLICATION FOR LICENSE TO EXPORT
BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL

Sheet no. 70-232
IA No. 243
Mail Control 77-26
Institution 1495

Submit in Triplicate

Carefully Read Instructions on Back

1 DATE OF APPLICATION February 11, 1977	2 APPLICANT'S REFERENCE NO. (if any) IEL-782	3 COUNTRY OF ULTIMATE DESTINATION IRAN
4 NAME OF APPLICANT GENERAL ATOMIC COMPANY ATTN: William R. Mowry STREET ADDRESS P. O. Box 81608 CITY, STATE, AND ZIP CODE San Diego, CA 92138	5 ULTIMATE CONSIGNEE IN FOREIGN COUNTRY (Name and address) Atomic Energy Organization of Iran Nuclear Research Center P. O. Box 3327 Tehran, Iran	
6 INTERMEDIATE CONSIGNEE IN FOREIGN COUNTRY (Give name and address. If same as ultimate consignee, state "Same.") SAME	7 IF PURCHASER IN FOREIGN COUNTRY IS OTHER THAN ULTIMATE CONSIGNEE, GIVE NAME AND ADDRESS. (If same, state "Same.") SAME	
8 (a) QUANTITY TO BE SHIPPED (See instructions on back) 21.7 Kg Uranium contain- ing 20.2 Kg U-235	(b) COMMODITY DESCRIPTION (Include chemical and physical form for special nuclear material and byproduct material also specify isotopic content; if in a device, identify the device, manufacturer, and model number.) TRIGA fuel elements containing a Uranium-Zirconium-Hydride Alloy The uranium is enriched in U-235 to 93.15%.	

(c) SHIPPING AND PACKING PROCEDURES (Required for special nuclear material. See instructions on back.)

Packaging will be accomplished at the applicant's address. The fuel elements will be in NRC-licensed (COC Nos. 9034 or 9037) packages. Shipping will be under applicable DOT & IAEA regulations.

9 END USE OF COMMODITIES COVERED BY THIS APPLICATION (Describe fully, stating what will be produced or manufactured, what service will be rendered, or the nature of the research that will be performed.) (See instructions on back for special nuclear material.)

The reactor fuels will be used in the existing Tehran Research Reactor. The reactor is used for personnel training, nuclear research and isotope production.

10 The applicant, and any official executing this certificate on behalf of the applicant named in item 4, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Parts 50 and 70 (for byproduct material) or Part 40 (if for source material), or Part 70 (if for special nuclear material), and Part 71 (for transport of radioactive material, if applicable) and that all information contained herein, including any supplements attached hereto, is true and correct to the best of their knowledge and belief.

cc. 2/16/77

GENERAL ATOMIC COMPANY

(Applicant named in item 4)

by: William R. Mowry
William R. Mowry
Licensing Administrator

(Title of certifying official authorized to act on behalf of the applicant)

APPENDIX A

Warning: 18 U.S.C. Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction

1p.
8006046252



GENERAL ATOMIC

GENERAL ATOMIC COMPANY
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138
(714) 455-3000

In Reply
Refer To: :

March 2, 1977

Dr. Michael A. Guhin, Assistant Director
Export/Import and International Safeguards
Office of International Programs
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Transmittal of End-Use Statement; Iran

Reference: IEL-782 dated February 11, 1977,
Application for SIM Export License; Iran

Dear Dr. Guhin:

General Atomic Company submitted an application, referenced above, for an export license to Iran covering TRIGA research reactor fuels. In paragraph two of that application we indicated that a signed End-Use Statement would be forwarded to the commission upon its receipt by us. The End-Use Statement from the Atomic Energy Organization of Iran is attached for your handling of the application.

We continue to look forward to your cooperation in the timely issuance of the requested export license.

Very truly yours,

William R. Mowry

William R. Mowry
Licensing Administrator
Nuclear Materials Control Division

RECEIVED
WRM:ts/AS. NBC

Attachment
1977 MAR 4 PM 4 34

EXPORT/IMPORT
SAFEGUARDS

ZRR.

~~8006046254~~

ATOMIC ENERGY ORGANIZATION OF IRAN

NUCLEAR RESEARCH CENTRE

Mr. William R. Mowry
Manager, Licensing Administration
General Atomic Company
P. O. Box 81608
San Diego, California 92138

Subject: End-Use Statement of Consignee

Dear Mr. Mowry:

We request that this statement be considered a part of the application filed by General Atomic Company for its license to export special nuclear material.

We desire to receive the following material in the quantities indicated below:

<u>Material Type</u>	<u>Form</u>	<u>Quantity</u>
Uranium enriched to 93% U-235	U ₂ IrH in TRIGA fuel elements	21.7 Kg of Uranium containing 20.2 Kg of U-235

We will use the special nuclear material listed above for the following purpose:

The TRIGA fuel clusters will be used to replace existing plate-type fuel elements in the 5.0 MW steady-state Tehran research reactor to extend core lifetime and to permit eventual operation of the reactor at a steady-state power level of 10 MW. The research reactor will be used for personnel training, nuclear research and isotope production.

We certify that all of the facts contained in this statement are true and correct to the best of our knowledge and belief and we do not know of any additional facts which are inconsistent with the above statement.

RECEIVED
U.S. NRC

1977 MAR 4 PM 4 34

GENERAL INVEST
AND SERVICES

ATOMIC ENERGY ORGANIZATION OF IRAN

By Morteza Taheri

Title Director

Date Nuclear Research C
AEOZ

GENERAL ATOMIC COMPANY
P.O. BOX 81608
SAN DIEGO, CALIFORNIA 92138
(714) 455-3000

1977 FEB 15 PM 1 In Reply
Refer To: 1

February 11, 1977

EXPORT
SAFEGUARDS

Dr. Michael A. Guhin, Assistant Director
Export/Import and International Safeguards
Office of International Programs
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Application for SNM Export License; IRAN

Dear Dr. Guhin:

General Atomic Company has need to export certain research reactor fuel elements as replacement fuels for the existing Tehran Research Reactor, which is owned and operated by the Atomic Energy Organization of Iran. These TRIGA fuel elements will be used to replace present spent plate-type fuel which contain uranium enriched in U-235 to 93%. The insertion of the new fuel will permit continued operation of the reactor for research purposes.

We have enclosed our NRC-7 application for license to export SNM. We will be submitting in the very near future for attachment to this application, an End-Use Statement signed by the consignee which will coincide with the quantities and purposes shown on the enclosed form NRC-7. Also enclosed is a brief analysis providing justification for the export of the fully-enriched uranium contained in the core.

General Atomic Company, whose main office is located at 10955 John Jay Hopkins Drive, San Diego, California, is the firm manufacturing and exporting the material. The material will be packaged at the main office location. Shipment of the fuel elements will be in accordance with the provision of the NRC Certificates of Compliance Nos. 9034 and 9037 and their corresponding Certificate of Competent Authority. The shipments will be made in compliance with DOT and other applicable regulations concerning such overseas shipments. We anticipate multiple shipments of the materials to reduce the possibility that the transportation cycle may be used as a mechanism for diversion.

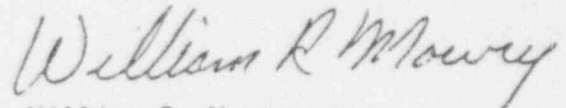
1388

~~8006040258~~

The refueling of the reactor is scheduled for mid-year 1978. Manufacture of the fuel and its shipments will require approximately one year.

We request issuance of the material export license, having a validity period of at least one year, at your earliest opportunity. Specifically, it would be desirable to receive the license or reasonable assurance that a license can be issued in a few months, hence July 1977. This date coincides with that in which the specific SNM material will be committed to production. We look forward to your cooperation in this matter.

Very truly yours,



William R. Mowry
Licensing Administrator
Nuclear Materials Control Division

WRM:ts

Enclosures: Form NRC-7
Justification Analysis

JUSTIFICATION FOR FULLY-ENRICHED SNM
CONTAINED IN TRIGA RESEARCH REACTOR FUEL

IN SUPPORT OF
FUEL EXPORT LICENSE TO IRAN

The 16-rod cluster TRIGA research reactor core for the Atomic Energy Organization of Iran, capable of operation at a power level of 10 MW, requires the use of fully-enriched uranium fuel. This document, after describing the project and fuel, justifies the use of fully-enriched uranium in such application. The justification is based on economics, reactor safety, special nuclear material safeguards and political considerations.

Project Description

General Atomic Company is under contract with the Atomic Energy Organization of Iran to supply an inherently safe, fully-enriched TRIGA core (30 fuel clusters) to replace the fully-enriched, plate-type core now being utilized. The reactor does not produce any electrical energy. The new core will be capable of operating at a thermal power level of 10 MW. However, until the cooling system for the present reactor is upgraded, the power level will be limited to a maximum of 5 MW.

Fuel Elements

The fuel material is a metallurgical combination of uranium, erbium and zirconium-hydride. The weight fractions are approximately 10 wt-% uranium (93% enriched), 1.5 wt-% erbium and 88.5 wt-% zirconium-hydride. The fuel is contained in 0.5-inch (nominal) diameter Incoloy cladding and has an active length of 22 inches. The fuel rods are assembled into 16-rod clusters formed by a 4 x 4 square array of rods. The core is designed, for heat transfer considerations, to operate with 30 fuel clusters. The core is designed for long burn-up life and contains a large amount of U-235 for this purpose. The reactivity effects of this large fuel loading are compensated by the use of erbium as a burnable poison. The reactivity effects of the burnup of uranium and erbium are about equal but of opposite sign. Thus the simultaneous burnup of both materials during operation of the core results in a relatively constant operational reactivity being available during the lifetime of the core.

Economic Considerations

There is a decisive, several million dollar economic advantage to the use of fully-enriched versus 20% enriched uranium in the 16-rod cluster TRIGA core. This advantage exists because the fully-enriched core will last about 10 times longer than the same core using 20% enriched uranium.* As a result, use of 20% enriched uranium means core fabrication and shipping costs have to be paid 10 times instead of once, and more uranium is used in the process because each of the 20% enriched cores must contain a sizable quantity of U-235 just to become operable, and only the additional uranium is available for burnup.

*Based on optimistic assumptions. More realistic assumptions would put the fully-enriched core life closer to 20 times that of a core using 20% enriched uranium.

JUSTIFICATION FOR FULLY-ENRICHED SNM
CONTAINED IN TRICA RESEARCH REACTOR FUEL
IN SUPPORT OF FUEL EXPORT LICENSE TO IRAN

- 2 -

The economic advantage is most readily demonstrated by comparing the quantity of U-235 available for burnup in a fully-enriched core versus a core with the same amount of uranium which is 20% enriched, and then computing the fuel cycle costs for the two systems. The consumption of U-235 as a function of MW days of operation remains essentially constant for either fuel enrichment. A 30-cluster core is necessary for heat transfer reasons and contains 19.8 Kg of U-235 if the uranium is 93% enriched or 4.25 Kg if the uranium is only 20% enriched. The basic minimum U-235 loading for a core, necessary to achieve initial operation to support the burnup of any additional fuel, is about 3.6 Kg of U-235. Thus, in the fully-enriched core, about 16.2 Kg of U-235 (4.5 times the basic operational loading) is available for burnup and offsetting fission product poisoning, while the 20% enriched core has available only about 0.65 Kg of U-235 (about 1/5 of the basic operational loading).

Using optimistic assumptions, the life of a 20% enriched core would be 520 MW days or 10 months at assumed operating levels. A 93% enriched core with the same assumptions has a life of \approx 5000 MW days or 99 months. From this knowledge, derived in detail in the attached Fuel Cycle Cost Comparison, it is shown that ten cores of 20% enriched fuel are required to achieve the same operational life as that of a single core of 93% enriched fuel.

Thus, after about every 10 months of operation, a 20% enriched core would have to be discarded, and a newly fabricated core committed to operation. And each 20% enriched core ties up about 3.6 Kg of U-235 in order to sustain the burnup of 0.65 Kg of U-235. Thus, to achieve the power production of a single, fully-enriched core by substituting 20% enriched uranium, at least 10 cores would have to be fabricated and the total U-235 necessary for these cores just to sustain operation ($\approx 10 \times 3.6 \text{ Kg} = 36 \text{ Kg}$) is more than twice as great as the amount available for burnup in the single, fully-enriched core ($\approx 16.2 \text{ Kg}$).

The economic consequences of this poor utilization of resources are devastating. As shown in the attached Fuel Cycle Cost Comparison, for the same total energy generation it costs about 8.85 million dollars using 20% enriched fuel and only 0.69 million dollars using fully-enriched fuel. Without even considering the manpower and reactor downtime costs associated with frequent replacement, shipping and calibration of the 20% enriched cores, the attached cost calculations show clearly that operation with 20% enriched fuel does not provide an acceptable alternative to using fully-enriched fuel.

JUSTIFICATION FOR FULLY-ENRICHED SNM
CONTAINED IN TRIGA RESEARCH REACTOR FUEL
IN SUPPORT OF FUEL EXPORT LICENSE TO IRAN

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Reactor Safety

A very important operational safety aspect is affected by the use of 20% enriched fuel in a 16-rod cluster TRIGA core. The void (or density) coefficient would actually change sign (from negative to positive) if 20% rather than fully-enriched uranium were used. Thus, heating of the water and nucleate boiling expected during normal operation would cause increases in reactivity and resulting increases in power. This is an unstable and thus a very undesirable condition which, for safety reasons, is strongly avoided in any nuclear core design.

Special Nuclear Material Safeguards Considerations

The safeguards implications of TRIGA reactors can be divided into two categories: production of plutonium and diversion of the reactor core uranium.

1. Production of Plutonium in TRIGA Reactors - The use of TRIGA reactors for the production of plutonium does not represent a practical safeguards or proliferation problem. The highest powered TRIGA reactor (14 MW), operated at an 80% duty cycle and equipped with a fertile (plutonium-producing) blanket, would require approximately 20 years to create a single critical mass of plutonium, if it could be fully recovered. Without the fertile blanket, the reactor would produce a total of 64 grams of plutonium per reactor core or 35 grams of plutonium per calendar year. The 14 MW core contains about 50% more uranium (93% enriched) than the core which is the subject of this application. Because of this extremely slow plutonium production rate, combined with the additional requirement for a complex and expensive hot reprocessing facility to separate the plutonium from the fertile blanket, plutonium production and recovery are not causes for concern in the use of TRIGA reactors.

It is also very significant that the production of plutonium is minimized by the use of fully-enriched uranium. This is caused since plutonium is bred through the bombardment of uranium-238 with neutrons during reactor operation and 20% enriched uranium contains fifty times more U-238/gm U-235 than fully-enriched uranium. Production of plutonium (weapons grade) in reactors is enhanced by larger fractions of U-238 and optimized irradiation times. Higher enriched uranium fuels with longer exposures to reactor neutrons is counter-productive to proliferation of weapons via plutonium production.

JUSTIFICATION FOR FULLY-ENRICHED SNM
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2. Diversion of TRIGA Reactor Core Uranium - In order to obtain weapons-grade material, the uranium, representing about 10% by weight of the fuel material, would have to be chemically separated from the zirconium and erbium which coexist as a metal alloy. This is a very difficult task, requiring very complicated chemical processing equipment and processes even before the fuel becomes radioactive. After the fuel has become radioactive, the chemical separation of the uranium would require a very sophisticated technology, plant, and equipment.

In addition, the reactor fuel is not an attractive diversion target since the material is contained in discrete fuel elements which can be easily counted. The inventory measurements depend only on a numerical count rather than on analytical measurement techniques. Any diversion of the fuel elements is therefore readily detected and would provide early warning of a nation's intention. Because of the certainty of detection and because the quantity of fissile material available is small relative to the consequences of an overt diversion, it does not seem reasonable that a nation would declare its willingness to violate international obligations and jeopardize its future nuclear development program for such a meager reward.

Political Considerations

In order to understand the effect of various policy options regulating the export of research reactors, it is helpful to review the current commercial situation. At the present time, the only U.S. supplier of research reactors is General Atomic Company. Figure 1 shows the wide distribution of General Atomic Company's TRIGA reactors throughout the world. The success of the TRIGA reactor is a result of its simplicity, economy, and unmatched safety characteristics. Table 1 shows some of the more important of these characteristics.

The nature of the research reactor business has changed in the past several years so that new customers are increasing in the developing nations. There have been no new domestic (U.S.) TRIGA sales since 1968. At the present time the TRIGA reactor is usually the first nuclear reactor to be installed in the importing country. The unique problems and opportunities involved in the export of reactors in such circumstances will be discussed below. Although it is the only U.S. supplier, General Atomic Company is not the sole source of research reactors in the international market. There are a number of competitors to the U.S. TRIGA as shown in Table 2. Because this competition exists, unilateral U.S. export restrictions will not further the objective

JUSTIFICATION FOR FULLY-ENRICHED SNM
CONTAINED IN TRIGA RESEARCH REACTOR FUEL
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Because the U.S. does not have a monopoly on research reactors, restricting exports will not prevent them from being purchased; they can be purchased elsewhere. If developing nations are going to have research reactors, there are important reasons for these reactors to be supplied from the U.S.:

1. Safety - Most organizations installing research reactors are in developing nations. Developing nations are usually limited in their technological base and in the availability of trained manpower. As a result, safety considerations for research reactors are of prime importance.

Inherent and unique physical characteristics make the TRIGA reactor the safest reactor ever built. The unique characteristics of TRIGA provide a level of safety not available in any other type of research reactor. This special safety is in large measure responsible for the success of the TRIGA reactor and is also a significant reason for continuing to make this system available to developing nations. Out of concern both for the health and safety of the citizens of these nations, and recognizing the adverse effects of a reactor accident anywhere in the world on the U.S. power reactor program, the U.S. Government should encourage TRIGA reactor competition in the world market.

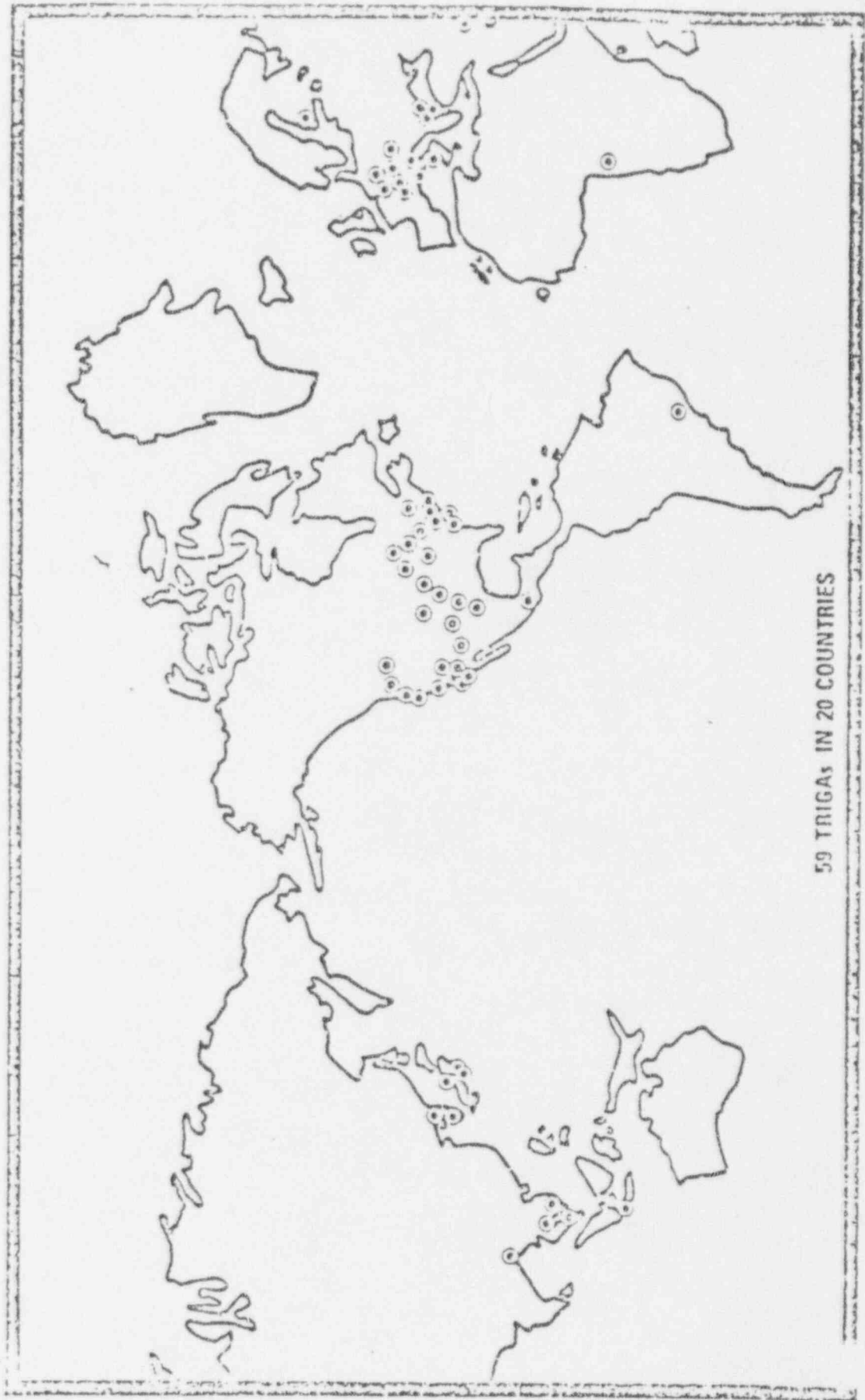
2. Nonproliferation Treaty Obligations - Under the Nonproliferation Treaty, the nuclear weapons states are committed to providing assistance to the nonnuclear-weapons states in the development of peaceful uses of nuclear energy. The sale of TRIGA reactors offers a way of providing such assistance with very limited safeguards risks.

3. Assistance to the Third World - Supplying TRIGA reactors can be a response to increased pressures to provide assistance to third world nations. Since the nations who want to obtain research reactors will purchase them regardless of U.S. restrictions, there can only be some political loss in not allowing these exports.

4. Influence in Nuclear Development Programs - Participation in the early stages of a nation's nuclear development program can provide insight into the planning for future power reactor installations. This in turn can give U.S. vendors an advantageous position in obtaining the commercial reactor business and therefore increase U.S. influence in both the early and later stages of the nation's nuclear development. Increased U.S. influence should enhance safeguards and reduce the risk of proliferation.

5. Early Test of Safeguards - U.S. participation at the research reactor stage will provide an opportunity to observe safeguards and physical security practices at low risk. Improvements can be suggested and decisions on power reactor exports could be made based on these observations.

TRIGA Research Reactors —



59 TRIGAs IN 20 COUNTRIES

A VITAL CONTRIBUTION TO PEACEFUL USES OF ATOMIC ENERGY THROUGHOUT THE WORLD

TABLE 1.

TRIGA - (AN ACRONYM FOR TRAINING, RESEARCH, ISOTOPES - GENERAL ATOMIC)

- TRIGA is designed for research, not electrical power production, and has mainly been purchased by universities and research institutes
- Low-power levels - 250 KW thermal to 14 MW thermal
- TRIGA is inherently safe
 - o Fool-proof because reactor fuel inherently and automatically shuts reactor down in case of power rise
 - o Fission products retained in the metallic fuel meat
 - o Fuel is chemically inert
- TRIGA is simple to operate (requires a staff of only 2 or 3)
- Minimum radioactive waste generation - only waste requiring disposal is solid demineralizer resin
- Involves small quantities of U-235 initially (typically less than 4 kg); depending on power level, refueling may never be required

TABLE 2

COMPETITION TO U.S. TRIGA

- o FRENCH - Technicatome (fully-enriched fuel)
 - o BRITISH - Fairey Engineering (fully-enriched fuel)
 - o RUSSIANS - 80% to fully-enriched fuel
 - o CANADIANS - AECL (fully-enriched fuel)
 - o GERMANS - INTERATOM (fully-enriched fuel)
-
- All competitors use highly-enriched fuel
 - All except Russians obtain fully-enriched fuel primarily from U.S. Government for fueling their research reactors
 - Safeguards required by U.S. Government are very stringent, usually much more so than by competitors' governments
 - All except U.S. TRIGAs receive substantial assistance (both financial and political) from their government in export sales
 - TRIGA is a completely private enterprise, competing with wholly or partially government-owned/subsidized firms

FUEL CYCLE COST COMPARISON

16-Rod Cluster TRIGA Core - 93% Versus 20% Enriched Uranium

Object: To compare the fabrication, uranium, shipping and reprocessing costs and U credits for one 93% enriched TRIGA core over its lifetime with the expected similar costs of the number of 20% enriched TRIGA cores required to provide the same number of years of reactor operation.

GENERAL ASSUMPTIONS

- o Reactor is operated at 5 MW at a duty cycle of 33%
- o Consumption of uranium-235 is 1.25/gms/MW day
- o Shipping charge for spent cores is \$60,000 per core in 1976
- o Present U.S. ERDA uranium prices are \$20,280/kg U for 93.15% enrichment and \$4,043/kg U for 20% enrichment
- o A TRIGA core consists of 28, 16-rod fuel clusters, Cat. #614 at \$19,000 ea and 2 instrumented 16-rod clusters, Cat. #714 at \$23,000 each. Total core price for 30 clusters = \$578,000 for fabrication exclusive of U value. The fabrication cost would be the same regardless of uranium enrichment.
- o The fuel pins in each TRIGA cluster provide 10.8 kg metal to be reprocessed. This weight would not change significantly for different enrichments.
- o Reprocessing of spent TRIGA fuel (current U.S. ERDA price schedule)
$$\$145/\text{kg metal} \times 10.8 \text{ kg metal/cluster} + (100\% - 32\% \text{ burnup}) \times (0.707 \text{ kg U/cluster}) (\$135) = 1566 + 65 = \$1631/\text{cluster or } \$49,000/\text{core in 1976}$$

Reprocessing costs for different enrichments or burnups are not significantly different.
- o All costs escalate by 6% per year
- o The 93% enriched TRIGA fuel contains the burnable poison erbium so that the core excess reactivity with 30 clusters is about the same as for 30 clusters of 20% enriched fuel without erbium. In both cases the uranium loading is 10 wt. %.

93% ENRICHED TRIGA CORE ASSUMPTIONS AND CALCULATIONS

- o Each TRIGA cluster contains 0.659 kg U-235 or 0.707 kg U.
Total core = 19.77 kg U-235 or 21.21 kg U.
- o Value of U contained in new TRIGA core per current U.S. ERDA price schedule:
$$\$20,280/\text{kg U} \times 21.21 \text{ kg/core} = \$430,000/\text{core in 1976}$$
- o Total core fabrication + uranium price in 1976 = \$578,000 + \$430,000 = \$1,008,000

FUEL CYCLE COST COMPARISON

16-Rod Cluster TRIGA Core - 93% Versus 20% Enriched Uranium

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o Core Consumption Rate

Core loading of 30 TRIGA cluster lasts about 5,000 MW days or
164 MW months/core

$$\frac{164 \text{ MW months/core}}{.33 \text{ duty cycle} \times 5 \text{ MW}} = 99 \text{ months core life}$$

$$5,000 \text{ MWD/core} \times 1.25 \text{ g burnup/MWD} = 6,250 \text{ g U-235 burnup/core}$$

$$\text{Burnup} = \frac{6,250 \text{ g}}{19,770 \text{ g}} = 31.6\%$$

o End-of-life value of U remaining in core

$$\frac{19.77 \text{ kg U-235 new} - 6.25 \text{ kg U-235 burnup}}{21.21 \text{ kg U total when new} - 6.25 \text{ kg U-235 B.U.}} = \frac{13.52 \text{ kg U-235}}{14.96 \text{ kg U}}$$

= 90.4% enrichment

14.96 kg U remaining \times \$19,646/kg of 90.4% enriched U in 1976 = \$294,000 credit

20% ENRICHED TRIGA CORE ASSUMPTIONS AND CALCULATIONS

o 30-cluster core contains 4.25 kg U-235 or

$$\frac{4.25}{20\% \text{ enrich.}} = 21.25 \text{ kg U}$$

$$\text{Each cluster contains } \frac{4.25}{30} = 141.7 \text{ g U-235 or } 708 \text{ g U}$$

o Value of U contained in new 20% TRIGA core per current U.S. ERDA price schedule:

$$\$4,043.06/\text{kg U} \times 21.25 \text{ kg} = \$86,000/\text{core}$$

o Total core fabrication + U price in 1976 = \$578,000 + \$86,000 = \$664,000

o Core consumption rate

With 20% enrichment, core lasts maximum of 520 MW days or 1.4 MW years

$$\frac{1.4 \text{ MW yr}}{.33 \text{ duty cycle} \times 5 \text{ MW}} = 0.85 \text{ year or } 10 \text{ months core life}$$

$$520 \text{ MWD/core} \times 1.25 \text{ g burnup/MWD} = 650 \text{ g U-235 burnup/core}$$

$$\text{Burnup} = \frac{650}{4,250} = 15.3\%$$

FUEL CYCLE COST COMPARISON
 16-Rod Cluster TRIGA Core - 93% Versus 20% Enriched Uranium

- 3 -

- o End of life value of U remaining in each core

$$\frac{4.25 \text{ kg U-235 new} - 0.65 \text{ kg burnup}}{21.25 \text{ kg U total when new} - 0.65 \text{ kg U-235 B.U.}} = \frac{3.6 \text{ kg U-235}}{20.6 \text{ kg U}} = 17.4\% \text{ enrichment}$$

$$20.6 \text{ kg U remaining} \times \$3,480/\text{kg of 17.4\% enrichment} = \$72,000 \text{ credit per core}$$

- o Cost of burned up uranium to be replaced at each core purchase
 \$86,000 cost for full new core - \$72,000 reprocessing credit = \$14,000

CONCLUSIONS

Looking at the core lifetimes of nearly 100 months for the 93% enriched and the upper limit estimate of about 10 months for the 20% enriched cores, it is obvious that ten 20% cores are required to give the same amount of reactor operation as one 93% core.

SUMMARY OF FUEL CYCLE COSTS

	<u>Total Cost for Ten 20% TRIGA Cores</u>		<u>Total Cost for One 93% TRIGA Core</u>	
	<u>No Escalation</u>	<u>With 6% Escalation</u>	<u>No Escalation</u>	<u>With 6% Escalation</u>
Fuel Fab	\$5,780,000	\$7,261,000	\$ 578,000	\$ 578,000
Uranium	284,000	324,000	430,000	430,000
Shipping	600,000	832,000	60,000	103,000
Reprocessing	<u>490,000</u>	<u>679,000</u>	<u>49,000</u>	<u>84,000</u>
Subtotal	\$7,154,000	\$9,096,000	\$1,117,000	\$1,195,000
U credits at end of core life	<u>(144,000)</u>	<u>(246,000)</u>	<u>(294,000)</u>	<u>(503,000)</u>
TOTAL NET	\$7,010,000	\$8,850,000	\$ 823,000	\$ 692,000

As can be seen, it would cost a minimum of 12 times as much or over \$8 million extra to operate a 5 MW TRIGA with 20% enriched fuel. This is nearly one million dollars extra per year. These calculations don't even assess the tremendous power and reactor downtime costs associated with the frequent replacement, shipping and recalibration of the 20% cores; or the inconvenience and lost time of experimenters using the reactor.

The data show that operation with 20% enriched fuel does not provide an acceptable alternative to using fully-enriched fuel.



GENERAL ATOMIC

RECEIVED
U.S. PAC

GENERAL ATOMIC COMPANY
P.O. BOX 81508
SAN DIEGO, CALIFORNIA 92138
(714) 455-3000

July 18, 1978

1978 JUL 24 11 26
Refer To: IEL-938

EXPORT/IMPORT
AND
INTERNATIONAL SAFEGUARDS

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

XSNM01088
70-2523

Subject: XSNM-1088; Application for Amendment.

Dear Mr. Oplinger:

General Atomic made application 2/11/77 for an export license authorizing the export of SNM to Iran. That application is still pending before the Commission. During the protracted review and approval it has been determined that additional fuel is required to allow the consignee a minimum degree of flexibility for in-core experiments and also to provide for a reasonable degree of design uncertainty in the reactivity of the core. We hereby apply for an amendment to our original application, requesting approval to export uranium contained in 36 fuel clusters rather than the 30 clusters requested in the original application.

Our original application requested the export of 21.7 kg. Uranium containing 20.2 kg. U-235. That quantity of fuel was based upon a 30 cluster close-packed reactor core with limited excess reactivity. This configuration would normally restrict an experimental program to small experiments located outside of the core. The consignee now requires that the option exist for in-core experimental locations. A corresponding core size expansion is necessary to provide a minimum degree of additional reactivity for this purpose. An approximate allocation of the additional fuel would be: Depending upon where the clusters were placed, the addition to the core of 4 fuel clusters would provide about 1 to 2% in additional reactivity for in-core experimental flexibility. Two fuel clusters would provide about 1/2 to 1% of reactivity as a contingency against design and manufacturing uncertainties in the initial reactivity of the core and the variable associated with placement of the in-core locations. State-of-the-art design uncertainties are in this approximate range (or larger). This amended application requests approval to export up to 26.2 kgs. of uranium with up to 24.4 kg U-235.

It is our understanding that the fuel supply to this Iran research reactor has been undergoing review in the State Department and this application is made at this time to assure that the agreement for cooperation, currently under renegotiation, includes the quantity of fuel required by the Tehran research reactor for which this and the above-referenced application fuels are made.

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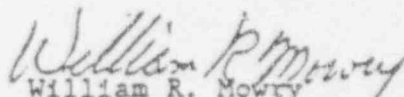
APPENDIX A

0002

Because of the status of review within the Executive Branch, we are amending now SNM quantity to be licensed by supplying an additional NRC Form 7 for the added fuel and a new end use statement for the total material to be exported. This end use statement supersedes that supplied with our 2/11/77 application.

Your cooperation in promptly distributing this amendment to the concerned agencies would be appreciated so that the entire complement of fuel may be considered during activities culminating with the necessary export license approvals. We continue to look forward to the timely completion of the agreement's renegotiation which can allow the other export license approvals to proceed. The fuels are fabricated and shipment is desired at the earliest opportunity. Original shipping plans were made for August 1978.

Very truly yours,



William R. Mowry
Licensing Administrator
Nuclear Materials Control Division

WRM:hcs

Att: Form AEC-7

End Use Statement dated May 16, 1978

ATOMIC ENERGY ORGANIZATION OF IRAN

NUCLEAR RESEARCH CENTER
P.O. BOX 3327, TEHRAN, IRAN

Mr. William R. Mowry
Manager, Licensing Administration
General Atomic Company
P.O. Box 81608
San Diego, California 92138
U. S. A.

Subject: End-Use Statement of Consignee

Dear Mr. Mowry:

We request that this statement be considered a part of the application filed by General Atomic Company for its license to export special nuclear material.

We desire to receive the following material in the quantities indicated below:

<u>Material-Type</u>	<u>Form</u>	<u>Quantity</u>
Uranium enriched to 93% U-235	UZrH in TRIGA fuel elements	26.2 Kg of Uranium containing 24.4 Kg of U-235

We will use the special nuclear material listed above for the following purpose:

The TRIGA fuel clusters will be used to replace existing plate-type fuel elements in the 5.0 MW steady-state Tehran research reactor to extend core lifetime and to permit eventual operation of the reactor at a steady-state power level of 10 MW. The research reactor will be used for personnel training, nuclear research and isotope production.

We certify that all of the facts contained in this statement are true and correct to the best of our knowledge and belief and we do not know of any additional facts which are inconsistent with the above statement.

ATOMIC ENERGY ORGANIZATION OF IRAN

BY A. OWLYA *A. Owly*

Title Acting Director

Date May 16, 1978

APPLICATION FOR LICENSE TO EXPORT
BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL

Submit in Triplicate

Carefully Read Instructions on Back

1 DATE OF APPLICATION July 18, 1978	2 APPLICANT'S REFERENCE NO. (if any) IEL-938	3 COUNTRY OF ULTIMATE DESTINATION IRAN
4 NAME OF APPLICANT GENERAL ATOMIC COMPANY STREET ADDRESS Attn: William R. Mowry P.O. Box 81608 CITY, STATE, AND ZIP CODE San Diego, CA 92138	5 ULTIMATE CONSIGNEE IN FOREIGN COUNTRY (Name and address) Atomic Energy Organization of Iran Nuclear Research Center P.O. Box 3327 Tehran, Iran	
6 INTERMEDIATE CONSIGNEE IN FOREIGN COUNTRY (Give name and address. If same as ultimate consignee, state "Same.") SAME	7 IF PURCHASER IN FOREIGN COUNTRY IS OTHER THAN ULTIMATE CONSIGNEE. GIVE NAME AND ADDRESS. (If same, state "Same.") SAME	
8 (a) QUANTITY TO BE SHIPPED (See instructions on back) *4.5 Kg Uranium contain- ing 4.2 Kg U-235	(b) COMMODITY DESCRIPTION (Include chemical and physical forms for special nuclear material and byproduct material also specify isotopic content; if in a device, identify the device, manufacturer, and model number.) TRIGA fuel elements containing a Uranium-Zirconium-Hydrate Alloy. The uranium is enriched in U-235 to 93.15%.	

(c) SHIPPING AND PACKING PROCEDURES (Required for special nuclear material. See instructions on back.)
Packaging will be accomplished at the applicant's address. The fuel elements will be in NRC-licensed (COC Nos. 9034 or 9037) packages. Shipping will be under applicable DOT & IAEA regulations.

9 END USE OF COMMODITIES COVERED BY THIS APPLICATION: (Describe fully, stating what will be produced or manufactured, what service will be rendered, or the nature of the research that will be performed.) (See instructions on back for special nuclear material.)
The reactor fuels will be used in the existing Tehran Research Reactor. The reactor is used for personnel training, nuclear research and isotope production.

10 I, the applicant, and any official executing this certificate on behalf of the applicant named in Item 4, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Parts 30 and 36 (if for byproduct material) or Part 40 (if for source material), or Part 70 (if for special nuclear material), and Part 71 (for transport of radioactive material, if applicable); and that all information contained herein, including any supplements attached hereto, is true and correct to the best of their knowledge and belief.

*This amount is additive to that requested in our 2/11/77 application. The license should be issued for 26.2 Kg Uranium containing 24.4 Kg U-235p
G.S. PAC

GENERAL ATOMIC COMPANY

(Applicant named in Item 4)

By: William R. Mowry
William R. Mowry
Licensing Administrator

(Title of certifying official authorized to act on behalf of the applicant)

1978 JUL 24 AM 11 20

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DEPARTMENT OF STATE

Washington, D.C. 20520

BUREAU OF OCEANS AND INTERNATIONAL
ENVIRONMENTAL AND SCIENTIFIC AFFAIRS

APR 14 1980
EXPORT AND
INTERNATIONAL AFFAIRS

XSNM01088

70-2523

Mr. James R. Shea
Director of International Programs
United States Nuclear Regulatory Commission
Room 6714 - MNBB
Bethesda, Maryland

Dear Mr. Shea:

This letter is in response to the Commission's letter dated March 15, 1977, as amended by Mr. Oplinger's letter of August 8, 1978, requesting Executive Branch views as to whether issuance of an export license in accordance with the application hereinafter described would be inimical to the common defense and security of the United States and whether the proposed export meets the applicable criteria of the Atomic Energy Act of 1954, as amended by the Nuclear Non-Proliferation Act of 1978:

NRC No. XSNM01088 -- Application by General Atomic Company to authorize export to Iran of 24.4 kilograms of U-235 contained in 26.2 kilograms of uranium enriched to 93.15 percent in the form of TRIGA fuel elements for the TRIGA Research Reactor operated by the Atomic Energy Organization of Iran.

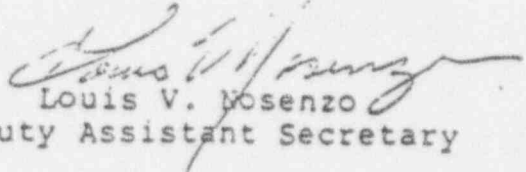
The Executive Branch has reviewed this application and concluded that the requirements of the Atomic Energy Act, as amended by P.L. 95-242, have not been met in that there is no Agreement for Cooperation between the United States and Iran as required by Section 123 of the Act. Moreover the Executive Branch is unable to make a determination that the proposed export will not be inimical to the common defense and security of the United States in view of current conditions in Iran.

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On the basis of the foregoing, the Executive Branch
is returning the license application without action.

Sincerely,



Louis V. Rosenzo
Deputy Assistant Secretary