



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

COMM
CORR

March 1, 1979

The Honorable Morris K. Udall, Chairman
Committee on Interior and Insular Affairs
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

In your letter of December 28, 1978, you requested a chronology of events leading to the discovery of the broken seals on drums containing highly enriched uranium being exported to Romania. A chronology and summary concerning this export shipment are enclosed.

Although this was an export shipment, the incident was principally a domestic problem in that the seals on the drums were broken enroute from the licensee's site in San Diego, California to Kennedy Airport in New York.

The broken seals presented an unusual and complex problem, since the event occurred at the time of two long holiday weekends, and it was necessary to request a previously unplanned inspection by the International Atomic Energy Agency (IAEA) to verify safe arrival of the container contents. Three weeks elapsed between the shipment of the material from the United States on December 16, 1978 and the special IAEA inspection on January 5, 1979 which verified the safe arrival of the fuel. The attachments summarize the event and the ad hoc arrangements made in close cooperation with the Department of State for the IAEA verification of the fuel.

The Commission met with its staff to discuss this matter on December 22, 1978, and January 23, 1979. The attachments also discuss several measures being taken to avoid future occurrences of this type and to improve our domestic and international response time for any future problems of this type that might occur.

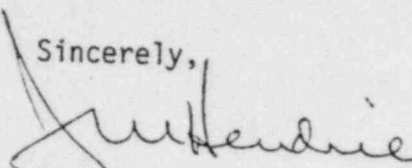
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The Honorable Morris K. Udall

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If you have any further questions concerning this, please let me know.

Sincerely,



Joseph M. Hendrie

Attachments:

- A. Broken Seals on Four Containers of Highly Enriched Uranium Exported to Romania (December 16, 1978)
- B. Chronology Concerning Initial Export Shipment to Romania Under License XSNM-885

cc: Rep. Steven Symms

BROKEN SEALS ON FOUR CONTAINERS OF
HIGHLY ENRICHED URANIUM EXPORTED TO ROMANIA (DECEMBER 16, 1978)

Event

The General Atomic Company, San Diego, California, has been authorized by the U. S. Nuclear Regulatory Commission under Export License XSNM-885 to export 38.92 kilograms of highly enriched uranium (HEU) and 43.47 kilograms of low enriched uranium as TRIGA reactor fuel from the United States to Romania. The licensee is exporting the HEU as multiple shipments, each containing less than 5 kilograms. Shipments of less than 5 kilograms are exempt from the controls prescribed by 10 CFR 73.30. For HEU export shipments under this license, U.S. Government seals are to be affixed to each container of HEU.

The initial shipment (contained in four drums) consisted of 100 fuel elements containing a total of 4479 grams of 93.15% enriched uranium as uranium-zirconium alloy (10% uranium). Each alloy element is clad with stainless steel. A unique serial number is imprinted in each element.

The outermost shipping container for this material consists of a modified 55-gallon drum with lid. Fixed within the center of the drum is a metal pipe, fitted with cap, approximately six inches in diameter. Inside the metal pipe are seven cardboard tubes, five of which hold five fuel elements each (two of the tubes are spacers) within their plastic envelopes. (A sketch of the container is Enclosure 1). There were four containers in the initial shipment.

The lid on the outermost container is held in place by a retainer ring. The ring, which can be opened for placement around the container and lid, has two lugs at the point of opening, with holes to accept a closure bolt. One of the lug holes is threaded. The lid is secured by drawing the retainer ring tight by a bolt through the lugs. On the threaded portion of the bolt -- which extends beyond the lug when tightened -- is a drilled hole for insertion of a container security seal. In this case, the security seal consists of wire passing through the hole in the bolt and joined within a seal button. The seal must be broken to remove the retainer ring and open the container in the normal manner. (A sketch of the closure and security seal is Enclosure 2).

The packaging and sealing of the four containers which constituted the initial shipment was observed by an NRC inspector at the licensee's site. (Three-strand seal wire was used rather than the minimum 19-strand recommended by a Regulatory Guide). When the seals were subsequently examined at J. F. Kennedy Airport in New York prior to export, all seals were found to be broken. Based on examination of the four containers

at Kennedy Airport, the NRC inspectors decided that the contents of the containers had not been disturbed. Consequently, the NRC inspectors resealed the containers without opening the containers to verify the contents. When the containers arrived in Romania, the seals affixed at Kennedy Airport were reported to be intact. Subsequently, the International Atomic Energy Agency (IAEA) inspected the contents of the containers and verified that the contents were as shipped from General Atomic Company.

NRC Use of Government Seals on the Shipment

Under this export license, a U.S. Government seal is to be affixed to each container of HEU exported under the license. The license is conditioned to allow NRC examination and sealing of each container.

The application of seals to shipments of less than 5 kilograms of highly enriched uranium is currently neither a normal requirement nor practice of NRC. The NRC has no specific instruction describing the method of affixing seals nor for controlling seals. In view of the large total quantity of highly enriched uranium involved in the multiple shipments of fuel to be made to Romania and the length of storage time before being loaded into the reactor, the NRC required seals on drums of all HEU shipments in accordance with arrangements made through the Department of State with IAEA. The purpose of the seals is to assure the integrity of material until inspected by IAEA in Romania. The research reactor and its fuel are subject to IAEA safeguards inspections in Romania.

Hence, although each shipment was below the quantity requiring the security measures of 10 CFR 73.30 (sealing by the licensee is one of these measures) the use of the seals for this "segmented" shipment did provide essential information concerning the integrity of the entire shipment. A requirement of the license is that for the "segmented" shipments the licensee shall confirm and log the arrival at the final destination of each shipment in the series before releasing the subsequent shipment.

Inspection of the Shipment at Kennedy Airport

There was no requirement, either in the rules and regulations (10 CFR 73) or the Export License, for examination of the seals at the point of debarkation, nor is such inspection a normal practice. However, NRC, because of the U. S. Government seals, decided that inspection at the point of debarkation was prudent. The NRC general procedure used for the inspection at the New York Kennedy Airport states that containers with broken or missing seals "... should be carefully inspected to verify that contents have not been disturbed." The procedure does not specifically call for opening the container to perform the verification nor the prompt notification of the NRC Regional Office by the inspector if broken or missing seals are found.

During the inspection of the seals at the Kennedy Airport prior to export, the NRC inspector and inspector intern found the seals on all four containers to be broken. After examination of the containers, the inspectors concluded that the containers had not been opened. This conclusion was based on: (1) the seal wire was in each case found still to be through the closure bolt hole provided for the seal wire; (2) the wire ends appeared to be frayed and uneven and appeared to have been broken or pulled out of the seal rather than cleanly cut; (3) the seals had not been protected from damage; (4) the drum lids, retainer rings, and closure bolt and nuts were tight and did not appear to have been disturbed; (5) external low level radiation readings, when taken, were similar to the readings taken by General Atomic prior to shipment. (Note: This was not an accurate measure of radioactive contents but an indication of generally the same amount of low level radioactivity emanating from the containers.); and, (6) when an inspector lifted the drums by tilting along one edge in order to reposition them, he noted by their weight that they contained other than packing material. The inspectors then affixed new seals, replacing the seal wire on three containers with nineteen-strand wire, using the existing three-strand wire for the fourth container. The inspector had insufficient nineteen strand wire to replace the wire for all four seals. The inspector reported their actions to Regional management the following day, Sunday, December 17, 1978.

The inspectors' judgment that the contents had not been disturbed later was confirmed by the IAEA inspection. Even though the inspectors' judgment was substantiated, the absence of the more judicious act of verifying the contents of the containers by opening the containers prior to resealing placed the NRC in a position for some days of having lower confidence that the contents of the container had not been disturbed.

NRC Headquarters, on the staff level, became aware of this matter on December 18, 1978. However, the event was not known at a level of management sensitive to its implication until December 21, 1978. On that date the Commissioners were informed. On the staff level, NRC advised the Department of State that an early inspection by IAEA would be needed. State agreed to determine the earliest date on which IAEA could make an inspection. On December 22, 1978, Congressional oversight staffs were notified and the Commission briefed by NRC staff.

Later it was reported that the shipment had arrived in Romania on December 20 with the seals (affixed at Kennedy Airport) intact.

On December 22, 1978, following the Commission briefing, the NRC staff contacted State to try to arrange for inspection of the material by IAEA as soon as possible, to notify the Romanians and to formalize communications on this subject. State agreed. Communications between NRC and State over the next several days resulted in advancing an IAEA

inspection planned for January 15, 1979, to January 5. On January 5, IAEA made its inspection and State advised NRC by telephone that as a result of this inspection, the contents of the shipment were determined to be intact in Romania. On January 8, State confirmed the results of the IAEA inspection.

On January 26, NRC was notified by State that the seal number record provided by NRC did not match a seal number on a drum as arrived in Romania. NRC confirmed from records made by the inspectors at Kennedy Airport that the seal on the drum was as affixed at Kennedy; however, the seal number transmitted by NRC to State was in error. Also, State reported that the wire in one seal was noted by IAEA to be detached from inside the seal. The seal, which had been returned to NRC by IAEA, was examined and the wire was found to be broken inside the seal button. The broken wire was the three strand wire.

NRC Future Actions

This event revealed several areas needing improvements and actions are underway or planned.

The Executive Director for Operations, NRC, has issued a memorandum instructing appropriate NRC Office Directors to assure appropriate staff notification of nonroutine export shipments.

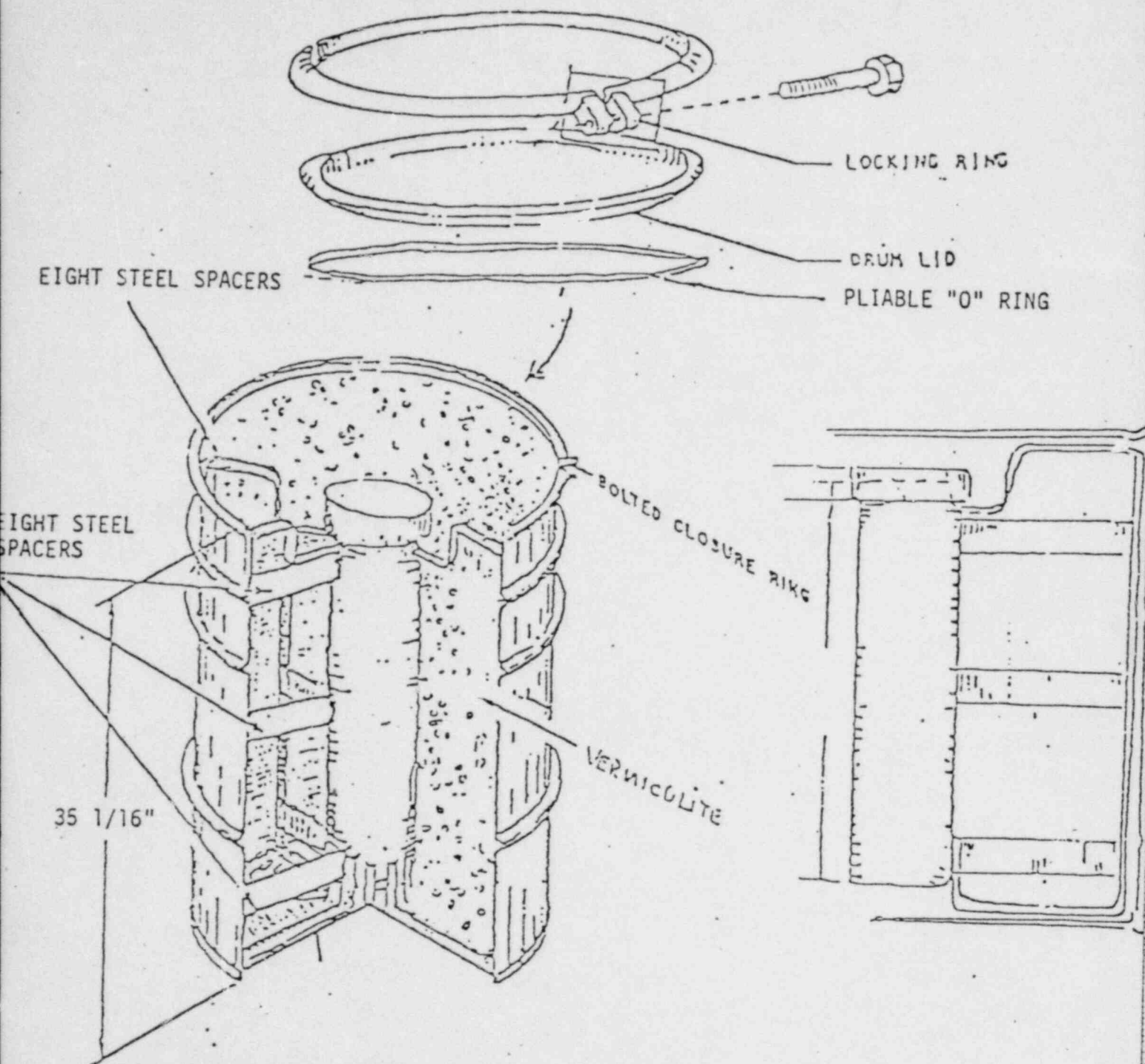
Procedures have been developed and implemented for proper verification of the remaining material for Romania prior to export.

An ongoing general review of safeguards inspection procedures has been accelerated. Where new procedures are needed -- such as control, application, and use of seals -- action is underway to assure their early development. The need for developing local procedures to supplement the more general procedures developed at the Office level has been emphasized. The need for prompt notification of unusual and nonroutine events has been emphasized.

This HEU seals event presented an unusual and complex problem at the time of two long holiday weekends since it involved verification of container contents in Romania. Verification of the shipment contents by the IAEA occurred two weeks after the first NRC approach to State Department seeking early assistance from the IAEA in resolving this domestic problem. In the light of experience gained in dealing with this matter, procedures for responding to any future problems similar to this should be considered to ensure that responses are prompt, effective, and appropriate to the uncertainties or threats that are presented.

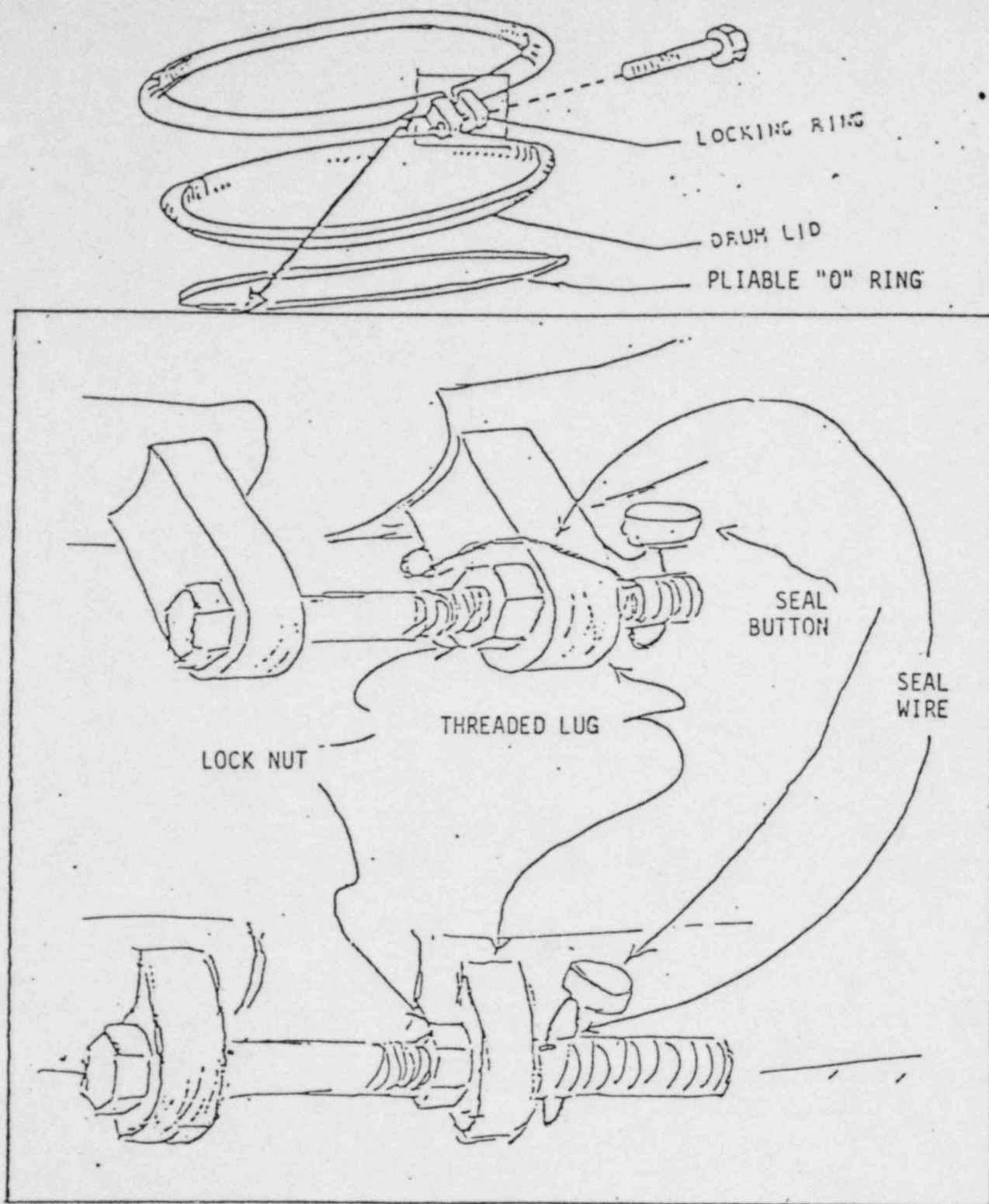
NRC will initiate discussions with State to explore with IAEA and other countries the possibility of establishing procedures and arrangements for mutual assistance for prompt response in case of incidents similar to the Romanian seals problem involving international transfers of nuclear material.

SKETCH OF SHIPPING CONTAINER



Enclosure 1 for
Attachment A

SKETCH OF CLOSURE AND SECURITY SEAL



Enclosure 2 for
Attachment A

CHRONOLOGY CONCERNING INITIAL EXPORT SHIPMENT TO
ROMANIA UNDER LICENSE XSNM-885

This unclassified chronology has been prepared from classified and unclassified documents and reports and from conversations with individuals involved. It is a chronology from the time that the license application was forwarded to the Commission for approval until the receipt of information from IAEA on January 5, 1979, that the contents of the drums involved in this shipment were intact. It is not all inclusive but lists matters believed to be most pertinent to this matter. Where conversations are shown in the chronology, the dates have been reconstructed and represent the collective memory of the individuals involved.

CHRONOLOGY PERTINENT TO CONTAINER SEALING PROVISIONS
UNDER LICENSE XSNM-885

JUNE 29, 1978

Office of International Programs (IP) sent to Commission a Staff Paper SECY 78-360 analyzing proposed Export License XSNM-885 for highly enriched uranium (HEU) to Romania for initial fuel for a TRIGA research reactor, and recommending approval of the license.

JULY 28, 1978

Commissioner Gilinsky by letter to the Executive Director for Operations asked various questions regarding the safeguards and physical security aspects of the HEU shipments under Export License XSNM-885.

AUGUST 15, 1978

IP sent to Commission Staff Paper SECY 78-360B to respond to Commissioner Gilinsky's questions in the July 28, 1978 letter.

AUGUST 21, 1978

IP sent to Commission Staff Paper SECY 78-360C proposing a letter to the Department of State (State) asking for further information about safeguards arrangements prior to fueling the reactor.

AUGUST 25, 1978

In Staff Paper SECY 78-360E, IP forwarded for the Commission's information a letter from State acknowledging their understanding that the Commission was awaiting clarifying information.

SEPTEMBER 5, 1978

Chairman Hendrie wrote State asking about several matters, including status of the facility attachment and the planned International Atomic Energy Agency (IAEA) inspection and verification measures, along lines of SECY 78-360C.

OCTOBER 12, 1978

State letter responded to Chairman Hendrie's September 5, 1978 letter, stating that the IAEA-Romanian facility attachment had been completed and that two alternative sealing arrangements for the HEU were under discussion with the IAEA. The alternative sealing arrangements were either (Procedure A) to affix IAEA seals at the General Atomic (GA) shipping facility, or (Procedure B) to affix U. S. Government seals at GA prior to shipment, then to replace U. S. Government seals with IAEA seals when IAEA inspected after arrival in Romania.

OCTOBER 16, 1978

IP sent to the Office of Nuclear Material Safety and Safeguards (NMSS) and the Office of Inspection and Enforcement (IE) a draft Staff Paper SECY 78-360F, discussing the question of IAEA versus U. S. Government seals. The alternatives were discussed at the staff level between NMSS and IE.

OCTOBER 26, 1978

IP forwarded to the Commission Staff Paper SECY 78-360F requesting Commission approval to issue License XSNM-885, with the recommendation that the license be conditioned upon affixing U. S. Government seals to the containers under NRC supervision prior to shipment from GA. Paper said either U.S. or IAEA seals would be acceptable, but expressed slight preference for IAEA seals.

NOVEMBER 2, 1978

IP, at the Commission's direction, wrote to State, saying that either sealing procedure would be acceptable (see October 12, above).

NOVEMBER 9, 1978

Cable from U. S. Mission, Vienna, to State which was forwarded to NRC, stated IAEA staff had cautioned that seal wire should be strong since seal location appears to leave seals vulnerable to breaking during handling.

NOVEMBER 20, 1978

State wrote to IP that IAEA had agreed to affixing U.S. Government seals at GA and replacing U. S. Government seals at a future date with IAEA seals (Procedure B). This letter, received November 22, also confirmed execution of the Facility Agreement for the reactor, and advised use of strong seals, due to possibility of accidental breakage.

NOVEMBER 21, 1978

An IE staff member contacted a staff member at State, who said that State and IAEA had decided to use U.S. seals and that seal "fingerprinting" was not required. This information was telephoned to the NRC Region V Office (San Francisco). Other details were discussed between IE Headquarters, and Region V.

NOVEMBER 22, 1978

IP issued Export License XSNM-885. State, IE and the Commission were notified of the license issuance and that it was conditioned on affixing of U. S. Government seals prior to shipment of material. (Procedure B)

IP sent a memorandum to the Commission advising that License XSNM-885 had been issued, enclosing copies of State letter of November 20 and a Vienna Cable of November 9. A copy of this memorandum with enclosure and a copy of the export license were delivered to an IE staff member.

IE, by memorandum to IP, stated that IE understood that U.S. seals were to be affixed to each fuel container by Region V inspectors and requested that IE be advised of the procedure to be used in notifying IAEA of seal numbers.

NOVEMBER 1978

During the latter part of November, the staffs of State, IP, IE and GA conferred frequently in considering the inspection and affixing of seals.

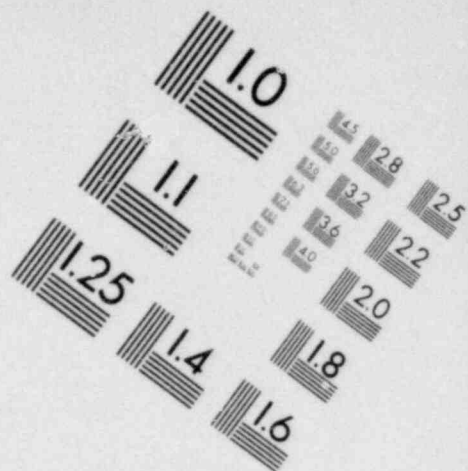
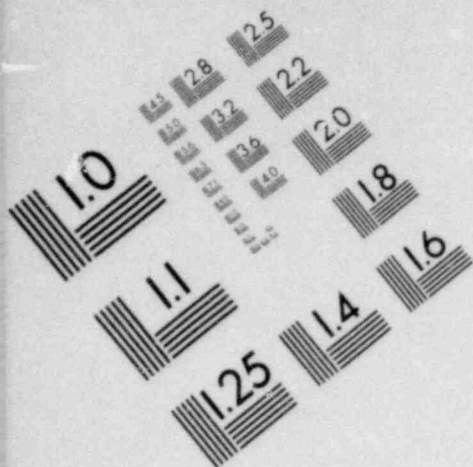
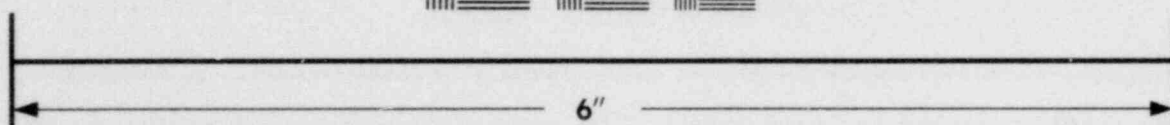
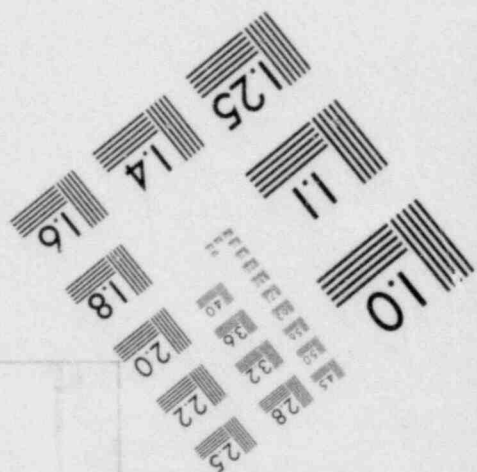
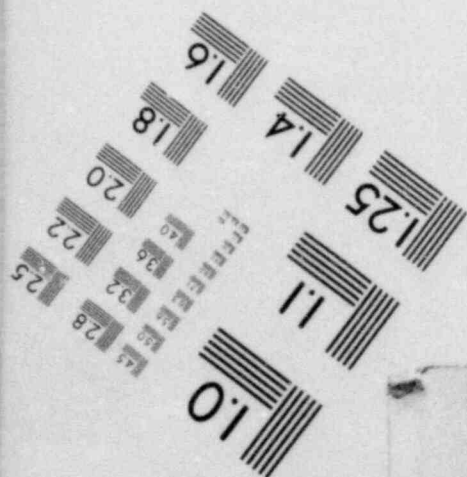


IMAGE EVALUATION TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART



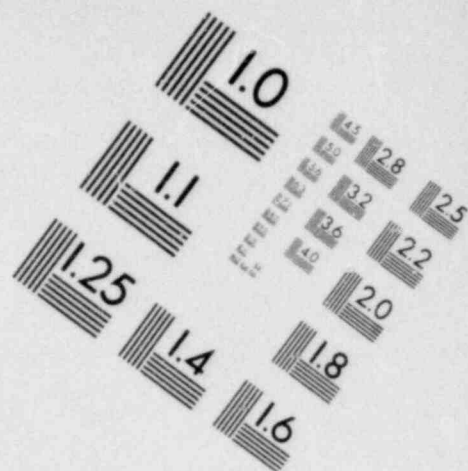
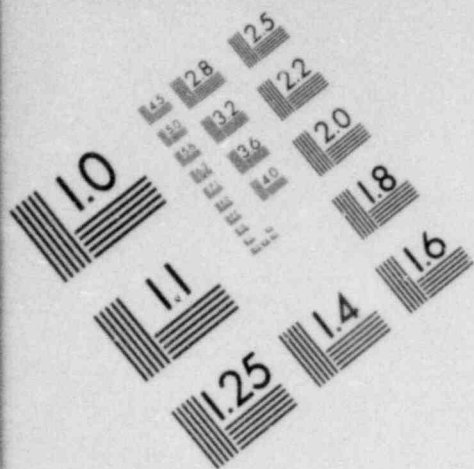
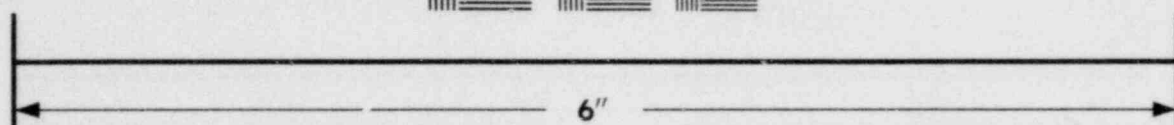
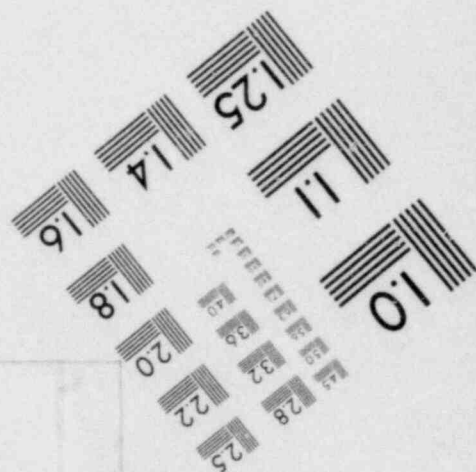
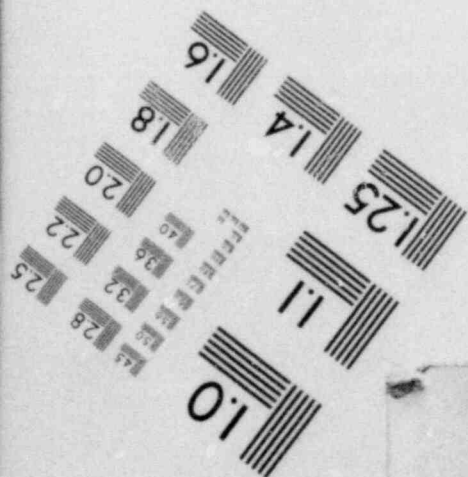


IMAGE EVALUATION TEST TARGET (MT-3)



MICROCOPY RESOLUTION TEST CHART



NOVEMBER 27, 1978

IE sent memorandum to Region V to set forth procedures to be followed for XSNM-885, which included the following:

1. Observation of loading.
2. Recording the serial number of each fuel element in each container.
3. Nondestructive assay of selected fuel elements.
4. Application of Type E seals to each container and recording of serial numbers.

NOTE: The memorandum did not include information concerning the need for strong seals.

ATTACHMENT B

CHRONOLOGY DIRECTLY PERTINENT TO RESEALING EVENT

DECEMBER 1, 1978

GA notified Region V staff that License No. XSNM-885 had been approved, and informed Region V that they wanted to start shipping during the latter part of the week of December 3.

DECEMBER 5, 1978

GA notified Region V that the first shipment was delayed, since Lufthansa decided not to accept the shipment.

DECEMBER 6, 1978

Region V inspector observed loading, serial number recording, non-destructive assay, and sealing of the shipping containers by GA personnel at the GA facility.

DECEMBER 13, 1978

GA notified Region V that the first shipment was scheduled for December 14.

Region V notified Region I that the shipment was scheduled to reach New York (Kennedy Airport) on December 15.

Region V contacted IE Headquarters to express concerns about the use of a three-strand seal wire as opposed to the nineteen-strand described in Reg. Guide 5.15. Region V had previously noted to GA that the Regulatory Guide calls for the use of nineteen strand wire. Region V stated the three-strand was as strong as the nineteen-strand, but that nineteen would be used in future shipments. It was agreed that it was too late to change seal wires on the initial shipment.

DECEMBER 14, 1978

Region V provided Region I with drum numbers and seal numbers. Region I requested specific flight information, which was obtained from GA and provided to Region I.

DECEMBER 14, 1978 (Cont'd)

GA informed Region V that the material had been returned to an intermediate trucking terminal in San Diego. Flying Tigers Airline had refused the shipment due to a misunderstanding. (Freight manager had not been instructed to receive hazardous materials.)

The Region I duty officer was advised of the postponement.

IE notified IP of drum and seal numbers. IP provided information to State.

DECEMBER 15, 1978

IE notified Region I that the shipment was postponed.

Region V verified that Region I was aware of the postponement.

Region I queried IE staff concerning information about the shipment (approximately 10:00 a.m. PST).

Region I called Region V to obtain current status of the shipment (approximately 11:45 a.m. PST) and was informed of the departure and expected arrival time. The inspector requested external radiation readings of each container, which were provided.

GA notified Region V at approximately 12:00 Noon PST that shipment departed Los Angeles at 6:00 a.m. PST.

Region I called British Airways (BAC) and determined that the scheduled departure time from New York to London was 1:30 p.m., December 16, 1978.

A Region I inspector, accompanied by an inspector intern, departed the Region I office and arrived in New York.

DECEMBER 16, 1978

Region I inspectors found that the seals on all four containers were broken. Three seals were attached to one end of the seal wire and the fourth seal was missing, although the seal wire was still attached. Inspector measured the low-level external radiation from the drums and found it to be similar to that measured at time of shipment from GA. He checked the closure bolt on each drum and found no indication of tampering. In moving the drums, he noted they contained more than packing. On the basis of these checks, and the appearance of the breaks, the inspector affixed new seals to each drum. He did not open the drums. The shipment departed Kennedy Airport around 6:00 p.m. on this day.

DECEMBER 17, 1978

The Region I inspector notified his supervisor about the broken seals and of his action in resealing. The Region I supervisor concurred in this action.

Shipment arrived in London and was scheduled for departure to Romania on December 20, 1978.

DECEMBER 18, 1978

IE staff member queried Region I concerning the status of the shipment and was informed of the seal breakage and replacement at approximately 8:20 a.m. EST.

IE staff member notified IP staff member of the seal breakage and resealing by the Region I inspectors. New seal numbers were given to IP for transmission to State and IAEA.

The IE staff member receiving the notification of the broken seals notified several other staff members in the IE Division of Safeguards Inspection (DSI) and the Assistant Director, DSI.

The IE staff member documented the conversation with Region I in a Memorandum to the File, which was typed and distributed on December 20.

DECEMBER 19, 1978

IP transmitted new seal numbers to State. State informed U.S. Mission to IAEA Vienna, by cable that seals had been found broken in New York and new seals affixed.

ATTACHMENT B

DECEMBER 20, 1978

IE/DSI staff member prepared Memorandum to File* on this event and a memorandum to staff member counterpart in IP confirming new seal numbers.

Shipment arrived in Romania on December 20, 1978.

DECEMBER 21, 1978

The Director, DSI, received a copy of the Memorandum to File covering this event dated December 20, 1978, (as is usual practice) and notified the Acting Office Director, IE, Assistant Director for Exports and Imports, IP, and Deputy Director, IP. Deputy Director, IP, concurred in preliminary statement to Commissioners. It was agreed (about 6:45 p.m.) that IE would inform EDO and the Commissioners.

Acting Director, IE, notified EDO and Commission.

NMSS notified by IE.

IP advised Department of State that an early inspection would be needed. State agreed to determine the earliest date at which IAEA could make an inspection. State noted several possible, practical problems (implications of GA - customer financial warranty responsibilities; possible charges by IAEA for a special inspection; holiday weekend pending, lack of right of U.S. either to require or to make an inspection; need to determine what the planned IAEA inspection would include). IP began to explore with State other ad hoc arrangements if early IAEA inspection was not possible. The substantial problems involved with inspections by other than IAEA inspectors (e.g., U.S. nationals) were noted.

DECEMBER 22, 1978

IP advised State of the serial numbers of the fuel elements. State said that the U.S. Mission to the IAEA had reported that the IAEA planned to send an inspector to Romania sometime in January but that the Mission would see if the visit could be made sooner rather than later.

* NOTE: This is the same memorandum listed under the December 18, 1978 entry.

ATTACHMENT B

DECEMBER 22, 1978 (Cont'd)

Congressional Oversight Staffs notified by IE.

Staff briefed Commission 3:00 p.m. on the incident. The Commission directed the staff to seek to assure that IAEA would verify contents of containers as soon as possible.

Late afternoon, IP phoned report of Commission meeting to high State official, requested State to try to arrange for inspection of material by IAEA as soon as possible, to notify Romanians, and to formalize communications on this subject. State agreed.

GA advised IP that the shipment had arrived in Romania on December 21.

DECEMBER 26, 1978

State and IP staff discussed matter; awaiting word from Vienna, which had national holidays December 25 and 26.

DECEMBER 27, 1978

DSI directed its investigator to investigate and provide a complete chronology of the Headquarters staff's actions, to be completed on or before January 4, 1979.

State advised IP that the verification procedures planned by IAEA would include content verification. IP notified IE, which confirmed that these procedures were very similar to NRC practice.

State advised IP that the planned date of the IAEA inspection was January 15, 1979.

State noted that GA anticipated having a representative in Romania for a week beginning January 10, and that, if possible, GA preferred having its employee present when the containers were opened. State was therefore attempting to move the IAEA inspection date up to January 10 or as soon thereafter as possible.

GA notified Region V of their intent to make the second shipment on Saturday, January 6, 1979.

ATTACHMENT B

DECEMBER 28, 1978

IP informed by State that new seals had been reported by Romanians to be intact upon arrival in Romania.

EDO instructed staff to ask State to further expedite inspection. State sent immediate cable to Vienna requesting expedited inspection.

IE/DSI directed Regions I and V to investigate and provide a complete chronology of the Regional staff's actions, to be completed on or before January 4, 1979.

DECEMBER 29, 1978

State advised IP IAEA inspector could arrive Bucharest January 4-5 at earliest, with the need to obtain visas the pacing factor. State, made several efforts (some at high level) to expedite visas and inspection.

IE, in coordination with IP, NMSS and ELD, notified GA by letter that additional HEU shipments should not be made until License Condition 11, which requires confirmation that the material has been received by the consignee, had been met.

JANUARY 2, 1979

State advised IP that inspector visas were expected to be issued January 3, making possible January 4 arrival in Bucharest and inspection January 4-5.

IE directed Regions I and V to notify the FBI and develop an investigation plan.

JANUARY 3, 1979

State advised IP that visas had been issued.

JANUARY 5, 1979

IAEA made its inspection. NRC requested results of inspection as soon as possible. State advised NRC by phone that, as a result of this inspection, the contents of the shipment were determined to be intact in Romania, and that the result would be confirmed later.

JANUARY 8, 1979

State confirmed results of IAEA inspection.

JANUARY 9, 1979

NRC dispatched Note to Editors (enclosed) concerning this matter.

JANUARY 26, 1979

State advised NRC that seal number 1514 which was on drum I-118 and removed by IAEA had been previously identified to the IAEA as seal number 1574. A check of NRC records for the seal application verified that seal No. 1514 was correct. The seal number transmitted by NRC to State was in error. Additionally, NRC was notified that the wire was no longer intact within seal No. 1519 and that somehow the wire apparently became detached from inside the seal button. This was three strand wire. IE examined seal 1519 and determined that the wire had broken inside the seal button.

The IAEA inspection of the drums and their contents on January 5, 1979 did confirm that the nuclear material contents were as shipped from General Atomic Company.

ATTACHMENT B



NUCLEAR REGULATORY COMMISSION

OFFICE OF PUBLIC AFFAIRS, REGION V

1990 N. California Boulevard, Suite 202, Walnut Creek, Ca. 94596

NRC:V-0379

Contact: Jim Hanchett
Bus: (415) 932-8300
Home (415) 820-3840

FOR IMMEDIATE RELEASE
(Mailed - January 9, 1979)

NOTE TO EDITORS:

The Department of State has advised the Nuclear Regulatory Commission that the contents of containers with high enriched uranium shipped to Rumania have been determined to be intact. The wire seals on these containers had been found to be broken or to have pulled out of the button holding the wires when the shipment was checked by an NRC inspector at Kennedy Airport in New York on December 16 after arrival from San Diego. Detailed information on this shipment is attached.

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Attachment

ENCLOSURE TO ATTACHMENT B

January 9, 1979

On December 15, 1978, General Atomic Company made the first shipment under an NRC export license of metal fuel rods containing high enriched uranium from its San Diego facility to Rumania for use as initial fuel in a newlybuilt research reactor. This shipment was less than five kilograms and did not require special NRC safeguards measures. These special measures--such as armed guards and secure vehicles--are required only for shipments of five kilograms or more of high enriched uranium because of the relatively lower safeguards concerns for lesser quantities.

Packaging of the four drums in this shipment was witnessed by an NRC inspector at the San Diego facility. A three-strand wire seal without special protection was applied to each drum while the inspector observed. The shipment then was trucked to Los Angeles where it was flown by cargo aircraft to Kennedy Airport in New York. The wire seals were checked by an NRC inspector at Kennedy Airport on December 16 and all of the wires that made up each of the four seals were found either to be broken or to have pulled out of the button holding the wires. The wires were still within the seal holes in the closure bolts. The inspector measured the low level external radiation from the drums and found it to be similar to that measured when the shipment originated at San Diego. He also checked the closure bolt on each drum and found no indication of tampering. On the basis of these checks, the inspector affixed new wire seals to each drum. However, the drums were not opened, as they should have been in this case, to verify that the high enriched uranium was still in the drums. The shipment left New York on December 16 and after stopping in London it arrived in Rumania on December 21.

The application of seals to such shipments is currently not a normal requirement of NRC. In view of the large total quantity of high enriched uranium involved in the multiple shipments of fuel to be made to Rumania and the length of time large quantities of material would be onsite before being loaded into the reactor, the NRC required seals on the drums of all shipments in accordance with arrangements made through the Department of State with the International Atomic Energy Agency. Their purpose is to assure the integrity of all the containers and to assist inspectors from the International Atomic Energy Agency on subsequent inspections of the fuel in Rumania. The research reactor and its fuel are subject to IAEA safeguards inspections.

The NRC staff advised the Department of State of its view that an early inspection of the shipment would be needed, and asked the Department to determine the earliest date on which the IAEA could make an inspection. The inspection initially had been planned for sometime in January. On December 22 the Commission was briefed on the matter and it directed the

staff to seek to assure that IAEA would verify the contents of the containers as soon as possible. The Department of State has advised the NRC that as a result of the IAEA inspection completed on January 5, the contents of the containers have been determined to be intact. The Commission has directed its staff to review the procedures used to make inspections of shipments of special nuclear materials so that incidents of this type will not occur again.

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December 28, 1978

Honorable Joseph Hendrie, Chairman
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Chairman:

I have been informed of the discovery of broken
seals on drums containing high enriched uranium.
I would appreciate your providing me a chronology
listing events leading to the discovery of the
broken seals and to a determination as to whether
or not the drums' contents are intact.

Thank you for your assistance.

Sincerely,

M. K. Udall
MORRIS K. UDALL
Chairman