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## **POLICY ISSUE** (Notation Vote)

February 13, 1998

SECY-98-023

**For:** The Commissioners

**From:** Carlton R. Stoiber, Director  
Office of International Programs

**SUBJECT:** PROPOSED "SUBSEQUENT ARRANGEMENT" TO AUTHORIZE ARGENTINA TO RECOVER AND USE FOR MEDICAL ISOTOPE PRODUCTION, TWO KILOGRAMS OF U.S.-SUPPLIED, UNIRRADIATED HIGH ENRICHED URANIUM (HEU)

### **Purpose:**

To obtain the Commission's approval of a proposed response to the Department of Energy (DOE).

### **Background:**

DOE has forwarded for NRC review a proposed "subsequent arrangement" request from Argentina (Attachment 1) for approval to recover, process and use up to two kilograms of previously-supplied, unirradiated HEU for the production of medical isotopes. U.S. approval is being sought pursuant to the terms of the U.S.-Argentina Agreement for Peaceful Nuclear Cooperation (the Agreement) concluded in 1996.

Section 131 of the Atomic Energy Act of 1954, as amended, requires the Department of Energy to obtain the concurrence of the Department of State and to consult with the NRC, the Arms Control and Disarmament Agency and the Department of Defense, before entering into

**Contact:**  
S. Schuyler-Hayes, OIP/NEMR  
415-2333

NOTE: TO BE MADE PUBLICLY AVAILABLE IN  
5 WORKING DAYS FROM THE DATE OF THIS PAPER

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Argentina  
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a proposed subsequent arrangement. The Secretary of Energy must then make a written determination, noticed in the *Federal Register*, that the subsequent arrangement will not be inimical to the common defense and security. The NRC staff, in its review of proposed subsequent arrangements, applies the same tests to the proposals that we would apply in the case of direct exports. In respect to a proposed use of U.S.-supplied HEU, the provisions of AEA Section 134, parts a. and b., are especially relevant.

Under the 1992 Schumer amendments to the Energy Policy Act (Section 134 of the AEA), the Commission is permitted to issue a license for the export of HEU to be used as a fuel or target in a nuclear research or test reactor only if, in addition to any other requirement of the Atomic Energy Act, the Commission determines that --

- (1) there is no alternative nuclear fuel or target enriched in the isotope U-235 to a lesser percent than that of the proposed export, that can be used in that reactor;
- (2) the proposed recipient of that uranium has provided assurances that, whenever an alternative nuclear reactor fuel or target can be used in that reactor, it will use that alternative in lieu of HEU; and
- (3) the United States Government is actively developing an alternative nuclear reactor fuel or target that can be used in that reactor.

The phrase "alternative nuclear reactor fuel or target" is defined to mean a fuel or target enriched to less than 20 percent in the isotope 235. The phrase "can be used" is defined to mean that the fuel or target has been qualified by DOE's Reduced Enrichment Research and Test Reactor (RERTR) Program, and the use of the fuel or target will permit the majority of ongoing and planned experiments and isotope production to be conducted in the reactor without a large percentage increase in the total cost of operating the reactor.

#### Status of Argentine Participation in the RERTR Program

Attachment 2 summarizes Argentina's participation in the U.S. RERTR Program. During the 1980's, as a result of its participation, Argentina successfully converted its RA-3 research reactor to low enriched uranium (LEU) and began to sell LEU research reactors to other countries. The 1987 RERTR Conference was held in Buenos Aires in 1987. A new phase of U.S.-Argentine cooperation specific to the development of an LEU target for medical isotope production is under discussion.

#### Status of Safeguards and Physical Protection in Argentina

On March 4, 1994, Argentina, Brazil, the ABACC and the IAEA entered into an agreement for the application of IAEA safeguards on all source and special nuclear material in their nuclear activities. The IAEA Board of Governors concluded that this agreement was compatible with the NPT. Argentina then ratified the NPT on February 10, 1995. Argentina also ratified the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Tlateloco Treaty) and waived into force Article 28 of the Treaty on January 18, 1994.



The IAEA Annual Report covering 1996 states that, with the exception of the DPRK situation [IP note: the situation has nothing to do with Argentina], "...the Secretariat did not find any indication that nuclear material which had been declared and placed under safeguards was diverted for any military purpose or for purposes unknown, or that safeguarded facilities, equipment or non-nuclear material were misused. All the items which had been declared and placed under the Agency safeguards remained in peaceful nuclear activities or were otherwise adequately accounted for."

With regard to physical protection, a physical protection evaluation was performed during a U.S. team visit to Argentina in July 1996. The conclusion of that review was that Argentina's physical protection program is consistent with the recommendations of IAEA INFCIRC/225/Rev.3.

### **Discussion:**

The 1996 Agreement for Cooperation between the U.S and Argentina requires U.S. approval before Argentina may alter, in form or content, any U.S.-supplied HEU (or other nuclear material under the Agreement). (Older Agreements generally placed such prior-approval requirements only on irradiated material, but new agreements cover both irradiated and unirradiated material.) In the present case, Argentina has requested permission to recover up to two kilograms of unirradiated HEU from research reactor fuel fabrication activities and to refabricate it as targets for medical isotope production in the RA-3 research reactor. In association with this request, DOE has recently proposed establishing a Sister Laboratory cooperation between the Argonne National Laboratory (which provides U.S. technical management of the RERTR Program) and the Comisión Nacional de Energía Atómica, focusing on the production of molybdenum-99 from LEU.

To help assure consistency of the proposed subsequent arrangement with the controls in Section 134, the U.S. Department of State has negotiated with the Argentine Ministry of Foreign Affairs a proposed exchange of diplomatic letters (Attachment 3), to be concluded in the near future, which would make clear certain commitments, as follows:

1. Unirradiated HEU transferred pursuant to the Agreement or used in or produced through the use of material or equipment so transferred in Argentina may be altered in form or content for the purpose of recovering and processing uranium, including through the cleaning of precipitated uranium from filters, for the production of medical isotopes.
2. Whenever a LEU target is qualified by the relevant authorities and does not result in a large percentage increase in the total cost of operating a reactor, including necessary associated equipment, for the production and processing of medical isotopes, such an alternative LEU target will be used in lieu of an HEU target after required equipment has been installed and the necessary licenses have been obtained.

3. In order to facilitate a smooth transition to the use of LEU targets, the U.S. and Argentina will cooperate in a program to develop LEU targets that can be used to produce medical isotopes.

The diplomatic notes are designed to effectuate a generic advanced consent to allow alteration in form or content of all U.S.-supplied unirradiated HEU scrap for fabrication of targets.

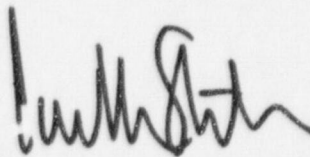
These commitments and Argentina's nuclear nonproliferation guarantees provide the basis for the Department of Energy's conclusion that the proposed subsequent arrangement is not inimical to the common defense and security.

**Coordination:**

EDO concurs in this paper. OGC has no legal objection.

**Recommendation:**

That the Commission approve the response to DOE at Attachment 4, indicating no objection to the proposed subsequent arrangement, contingent on the completion of the proposed exchange of diplomatic notes.



Carlton R. Stoiber, Director  
Office of International Programs

**Attachments:**

1. Faxed memo from T. Lee, dated 1/14/98
2. Faxed memo from T. Lee, dated 1/27/98
3. Fax/Draft Exchange of Letters with Argentina from F. McGoldrich dated 1/21/98
4. Letter from R. Hauber to C. Fitzgerald

Commissioners' completed vote sheets/comments should be provided directly to the Office of the Secretary by COB Tuesday, March 2, 1998.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT February 24, 1998, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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UNITED STATES GOVERNMENT

DEPARTMENT OF ENERGY

## memorandum

Date: January 14, 1998  
From: *T. T. Lee*  
Terri T. Lee, NN-42  
Subject: Request for Subsequent Arrangement Under NNPA of 1978  
To: Distribution

Attached for your review is a draft Federal Register notice concerning a proposed subsequent arrangement. Due to the urgency of this matter, I would appreciate your response by **January 20, 1998**. If you have any questions, please contact me at (202) 586-8945 or fax me at (202) 586-6789/2323. Thank you.

## Distribution:

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DEPARTMENT OF ENERGY

Office of Arms Control and Nonproliferation Policy

PROPOSED SUBSEQUENT ARRANGEMENT

AGENCY: DEPARTMENT OF ENERGY

ACTION: SUBSEQUENT ARRANGEMENT

SUMMARY: Pursuant to paragraph 2 of Article 6 of the Agreement for Cooperation Between the Government of the United States of America and the Government of the Argentine Republic Concerning the Peaceful Uses of Nuclear Energy, notice is hereby given of a proposed "subsequent arrangement" with respect to the alteration in form or content of unirradiated high enriched uranium (HEU) subject to the Agreement.

The subsequent arrangement to be carried out under the above-mentioned agreement involves approval of the alteration in form or content of up to 2 kilograms of unirradiated HEU subject to the Agreement in Argentina for the purpose of recovering and processing uranium for the production of medical isotopes.

In accordance with Section 131 of the Atomic Energy Act of 1954, as amended, it has been determined that this subsequent arrangement will not be inimical to the common defense and security.

This subsequent arrangement will take effect no sooner than fifteen days after the date of publication of this notice.

DATED:

For the Department of Energy

Cherie P. Fitzgerald  
Director  
International Policy and Analysis Division  
Office of Arms Control and Nonproliferation

CONCURRENCES

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# MEMO

**To:** Ron Hauber  
**From:** Terri T. Lee 7. 8.  
**Subject:** Proposed Argentina Subsequent Arrangement  
**Date:** January 27, 1998

Suzanne,

As you requested, I am providing you with a short summary of Argentina's participation in the Reduced Enrichment Research and Test Reactor (RERTR) program at the Department of Energy. Please contact me on 202-586-8945/or fax: 202-586-2323 if you have any additional questions.

## Summary

*History:* In 1980 the Argonne National Laboratory and Argentina's CNEA signed a MOU to cooperate, under the Department of Energy's funding, to design advanced fuel that can be used in Argentina's research reactors. By the late 80's, the cooperation lead to the successful conversion of Argentina's research reactor, RA-3, to LEU. The US-Argentina cooperation under the MOU eventually ended between 1987-1989. Success proofed beneficial to Argentina. It began to sell LEU research reactors to other countries close to the time when the RERTR Conference was held in Buenos Aires in 1987.

*Current Status:* The DOE recently proposed establishing a Sister-Laboratory cooperation between the Argonne National Laboratory and the CNEA in Argentina, focusing on the production of molybdenum-99 from LEU. Scientists from Argonne soon plan to visit Argentina to discuss the proposed cooperation.

cc: Suzanne Schuyler-Hayes



United States Department of State

Washington, D.C. 20520

BUREAU OF POLITICAL-MILITARY AFFAIRS

DATE: 1/21/98

RAPIDFAX TRANSMISSION

6 NUMBER OF PAGES (INCLUDING COVER SHEET)

TO:	NAME/ORG	PHONE NO.	FAX NO.
	Ron Hamber		301 415 2395
	Terra Lee		586 2323

FROM:

Fred Mc Goldmuck

ROUTING SYMBOL: PM/NE

TELEPHONE: (202) 647-4812

FAX NUMBER: (202) 647-0775

SUBJECT:

Argentina HCU

COMMENTS:

The GOA has agreed to the proposed exchange of letters ad ref. I would appreciate your speedy handling of this issue as the Argentines want to start producing moly in February.



argnte

Dear Mr. Minister,

I have the honor to refer to paragraph 2 of Article 6 of the Agreement for Cooperation between the United States of America and the Argentine Republic concerning Peaceful Uses of Nuclear Energy signed February 29, 1996 (hereinafter referred to as "the Agreement") and to propose the following understanding with respect to the alteration in form or content of high enriched uranium (HEU) transferred pursuant to the Agreement or used in or produced through the use of material or equipment so transferred:

Pursuant to paragraph 2 of Article 6 of the Agreement, the Government of the United States of America and the Government of the Argentine Republic agree that unirradiated HEU transferred pursuant to the Agreement or used in or produced through the use of material or equipment so transferred in Argentina may be altered in form or content for the purpose of recovering and processing uranium, including through the cleaning of precipitated uranium from filters, for the production of medical isotopes.

The Government of the United States and the Government of Argentina agree that whenever a low enriched uranium (LEU) target has been qualified by the relevant authorities and does not result in a large percentage increase in the total cost of operating a reactor, including necessary associated equipment, for the production and processing of medical isotopes, such an alternative LEU target will be used in lieu of an HEU target after required equipment has been installed and the necessary licenses have been obtained.

In order to facilitate a smooth transition to the use of LEU targets, the Government of Argentina and the Government of the United States will cooperate in a program to develop LEU targets that can be used to produce medical isotopes. A Joint Technical Working Group including experts from Argonne National Laboratory, the CNEA, and other relevant scientific institutions in Argentina and the United States will be established to consult on technical, environmental, regulatory and economic considerations pertaining to the adoption of new LEU targets for the production of medical isotopes.

If the Government of the Argentine Republic concurs, I propose that the understandings in this letter and your reply will become operative on the date of your reply.

Please accept the assurances of my highest consideration.

Sincerely,

I have the honor to confirm the following understandings with respect to paragraph 2 of Article 6 of the Agreement for Cooperation between the United States of America and the Argentine Republic concerning the Peaceful Uses of Nuclear Energy signed February 29, 1996 (hereinafter referred to as "the Agreement"):

Pursuant to paragraph 2 of Article 6 of the Agreement, the Government of the United States of America and the Government of the Argentine Republic agree that unirradiated HEU transferred pursuant to the Agreement of used in or produced through the use of material or equipment so transferred in Argentina may be altered in form or content for the recovering and processing uranium, including through the cleaning of precipitated uranium from filters, for the production of medical isotopes.

The Government of the United States and the Government of Argentina agree that whenever a low enriched uranium (LEU) target has been qualified by the relevant authorities and does not result in a large percentage increase in the total cost of operating a reactor, including necessary associated equipment, for the production and processing of medical isotopes, such an alternative LEU target will be used in lieu of an HEU target after required equipment has been installed and the necessary licenses have been obtained.

In order to facilitate a smooth transition to the use of LEU targets, the Government of Argentina and the Government of the United States will cooperate in a program to develop LEU targets that can be used to produce medical isotopes. A Joint Technical Working Group including experts from Argonne National Laboratory, the CNEA, and other relevant scientific institutions in Argentina and the United States will be established to consult on technical, environmental, regulatory and economic considerations pertaining to the adoption of new LEU targets for the production of medical isotopes.

I confirm that these understandings will become operative as of today.

Please accept the assurances of my highest consideration.



Sincerely,

Ms. Cherie P. Fitzgerald  
Director  
International Policy and Analysis Division, NN-42  
Office of Arms Control and Nonproliferation  
Department of Energy  
Washington, D.C. 20585

Dear Ms. Fitzgerald:

The Nuclear Regulatory Commission has reviewed and does not object to the proposed "subsequent arrangement" subject to the Agreement for Cooperation with Argentina to alter in form or content of up to 2 kilograms of unirradiated high enriched uranium for the purposes of recovering and processing uranium for the production of medical isotopes, upon conclusion of this exchange of diplomatic notes.

Sincerely,

Ronald D. Hauber, Director  
Nonproliferation, Exports and  
Multilateral Relations  
Office of International Programs

Attachment 4