POLICY ISSUE
(Notation Vote)

May 10, 1994 SECY-94-125

FOR: The Commissioners

FROM: Carlton R. Stoiber, Director
Office of International Programs

SUBJECT: DOE PART 810 REQUEST FOR SIEMENS POWER CORPORATION TO PROVIDE DRY CONVERSION TECHNOLOGY TO RUSSIA

PURPOSE:

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

DISCUSSION:

DOE has forwarded for review a request under 10 CFR Part 810 from Siemens Power Corporation (a U.S. subsidiary of Siemens AG of Germany) to transfer to Russia technology for the conversion of uranium hexafluoride to uranium dioxide, which is the initial step in the production of uranium dioxide nuclear fuel (94RS001-see Attachment 1).

Staff believes that such nuclear assistance should be approved. Although this export is part of a larger proposal to Russia including Siemens AG's proprietary technology, design, project management, training and technical support services, and specialized plant process equipment, only Siemens Power's proprietary dry conversion technology is subject to Part 810 authorization. The benefit of this export is primarily economic and environmental, with the Siemens technology simplifying the conversion process, generating less waste, and helping to limit the costs of electric power in Russia and perhaps in nuclear fuel client states such as Lithuania and Ukraine. The export of the related equipment is subject to the licensing controls of the Department of Commerce.

Contact: Karen Henderson, OIP/NEMR
504-2337

NOTE: TO BE MADE PUBLICLY AVAILABLE WHEN THE FINAL SRM IS MADE AVAILABLE

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DOE will approve the authorization subject to receipt of Russian government assurances that the technology transferred will be used only for the fabrication of nuclear fuel for civilian nuclear power reactors and will not be used for any military purpose; and retransfer to another country of this technology will be subject to prior U.S. Government consent.

CONCLUSION:

The staff believes the present case meets the statutory export criterion of non-inimicality to the interest of the U.S. and does not raise concerns from a proliferation or national security standpoint. Accordingly, with the conditions enumerated above, the staff finds no basis for the Commission to object to the authorization.

COORDINATION:

The Office of the Executive Director for Operations concurs in this paper. The Office of the General Counsel has no legal objection.

RECOMMENDATION:

That the Commission approve the dispatch of the proposed letter to DOE at Attachment 2.

Carlton R. Stoiber, Director
Office of International Programs

Attachments:
1. 4/4/94 DOE Ltr TDedik to RDHauber w/enclosures
2. Proposed response to DOE

Commissioners' comments or consent should be provided directly to the Office of the Secretary by COB Tuesday, May 24, 1994.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Tuesday, May 17, 1994, 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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Department of Energy
Washington, DC 20585

April 4, 1994

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'94 APR -5 P12:01

Mr. Ronald D. Hauber
Assistant Director, International Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Hauber:

The Department of Energy (DOE) has received a 10 CFR Part 810 request from Siemens Power Corporation, a U.S. subsidiary of Siemens AG of Germany, for authorization to transfer to Russia technology for the conversion of uranium hexafluoride to uranium dioxide, which is the initial step in the production of uranium dioxide nuclear fuel.

Siemens Power, a wholly-owned subsidiary of Siemens AG of Germany, operates a nuclear fuel fabrication plant in Richland, Washington.

According to the request, Siemens Power and Siemens AG intend to submit to Techsnabexport, the trading organization of the Russian Ministry for Atomic Power, a proposal under which:

- Siemens Power would provide to Techsnabexport its proprietary dry conversion technology, which is now in place at Siemens Power's German affiliate Advanced Nuclear Fuels GmbH and is currently being installed at the Siemens Power fuel fabrication plant in Richland, Washington.

- Siemens AG would supply a package of its own proprietary technology, design, project management, training and technical support services, and specialized plant process equipment to Techsnabexport's fuel fabrication facility in Moscow, which produces uranium fuel assemblies for VVER and RBMK power reactors. Among the Siemens AG elements in the package would be assistance enabling use of the Siemens Power conversion technology and technology for manufacturing uranium dioxide into nuclear fuel pellets.

Since Siemens AG is not subject to U.S. laws and regulations, only Siemens Power's proprietary conversion technology is subject to Part 810 authorization.

Siemens Power has informed DOE that it believes use of its uranium hexafluoride to uranium dioxide conversion technology will improve the quality of Russian nuclear fuel fabrication and substantially lower Russian costs. DOE technical experts describe the impact of the proposed transfer as primarily economic: the Siemens Power technology significantly simplifies the conversion process and generates less waste. These experts note that this could help to lower the cost of electric power in Russia and perhaps in nuclear fuel client states such as Lithuania and Ukraine.

ATTACHMENT 1

A more detailed description of the proposal may be found in Siemens Power's March 16, 1994, letter of application at Enclosure 1.

In reviewing the request, DOE staff considered the following factors:

- Russia is a party to the Nuclear Non-Proliferation Treaty and, as a nuclear weapons state, has entered into a voluntary agreement with the International Atomic Energy Agency for the application of safeguards to certain of its nuclear activities.

- Russia has assumed the responsibilities of the former Soviet Union under the U.S.-Soviet Agreement for Scientific and Technical Cooperation in the Peaceful Uses of Atomic Energy and the Memorandum in the Field of Nuclear Safety.

- The proposed activity presumably would confer some environmental benefit by reducing the generation of nuclear wastes in the conversion process.

A DOE staff analysis of the Siemens Power request is at Enclosure 2.

DOE staff believe this authorization should be subject to U.S. Government receipt of Russian Government assurances that:

- Technology transferred under the authorization will be used only for the fabrication of nuclear fuel for civilian nuclear power reactors and will not be used for any military purpose.

- Retransfer to another country of technology transferred under the authorization will be subject to prior U.S. Government consent.

On this basis, DOE staff intend to recommend the Secretary of Energy determine that authorization of the Siemens Power request will not be inimical to the interest of the United States. Your views on the proposed recommendation would be appreciated within 30 days of receipt of this letter.

In your response, please refer to Case No. 93RS001.

Sincerely,

Trisha Dedik
Director
Export Control Operations Division
Office of Export Control
and International Safeguards

Enclosure
1. Siemens Power Part 810 Request
2. DOE Staff Analysis

SIEMENS

March 16, 1994

U.S. Department of Energy
Washington, DC 20585

Attention: Director, Export Control Operations Division,
IS-40, Office of Export Control and International Safeguards

Re: Request for specific authorization

Gentlemen:

Siemens Power Corporation (SPC), a Delaware corporation with its principal place of business at 155 108th Avenue N.E., Bellevue, Washington, respectfully requests a specific authorization from the Department of Energy (DOE) pursuant to 10 CFR 810.8 and Section 57(b) of the Atomic Energy Act, as amended, to engage directly or indirectly in the production of special nuclear material in the Russian Federation as outlined below.

SPC is a wholly owned subsidiary of Siemens Corporation, a Delaware corporation. Siemens Corporation is a wholly owned subsidiary of Siemens AG (SAG), a Federal Republic of Germany corporation. SPC owns and operates a fuel fabrication plant located in Richland, Washington that has been in operation since 1969. Its affiliate, Advanced Nuclear Fuels GmbH (ANF GmbH) a Federal Republic of Germany corporation, owns and operates a fuel fabrication plant in Lingen, Germany. The Nuclear Division of SPC designs, manufactures and delivers nuclear fuel assemblies to its utility customers who operate commercial light water reactors (both boiling water reactors (BWR) and pressurized water reactors (PWR)) principally throughout the U.S., Taiwan and Europe. The Nuclear Division also provides nuclear fuel-related and reactor plant services to these utilities.

Techsnabexport Co. Ltd., (Techsnabexport) Staromonetnyi per., 26, 109180, Moscow, Russia owns and operates a fuel fabrication plant at K. Marx Street, 12, 144001 Elektrostal, Moscow district that has been in operation since 1917. The plant started to produce fuel assemblies in 1953 and is currently making fuel assemblies for VVER-440 and RBMK-1000 reactors.

In early 1994, SPC and SAG (Siemens) intend to submit to Techsnabexport as the trading organization for the Ministry for Atomic Power of Russia (MINATOM), St. B. Ordynka, 24/26, 101000 Moscow, Russia a proposal pursuant to which SPC would transfer its proprietary and patented dry conversion technology and Siemens would provide plant design, project management, training and technical support services, and supply specialized plant process equipment to enable Techsnabexport to incorporate SPC's dry conversion process of converting uranium hexafluoride to uranium dioxide (UF_6 to UO_2) into its nuclear fuel fabrication facility in Russia. This process is presently in place at the ANF GmbH plant in Lingen, Germany and is currently being installed at SPC's plant in Richland, Washington. The approximate monetary value of the total workscope to be proposed to Techsnabexport would be $50,000,000 with SPC's workscope accounting for about two-thirds of that amount. The proposal would, of course, include presentations to the prospective customer together with formal written bid(s).

Siemens Power Corporation

David G. McAlees
Senior Vice President
General Manager

Nuclear Division
Headquarters

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Bellevue, WA 98009-0777

Tel (206) 453-4342
Fax (206) 453-4446

SIEMENS

U.S. Department of Energy
Washington, D.C. 20585

Attn: Director, Export Control Operations Division,
IS-40, Office of Export Control and International Safeguards
March 16, 1994

The Russian Federation is a party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and, I am informed, has either entered into an agreement with the IAEA for the application of safeguards or has agreed to accept IAEA safeguards. Accordingly, these activities by SPC and SAG would be accomplished in accordance with IAEA safeguards and applicable laws and regulations of the United States of America, Germany and the Russian Federation. The proposed activities by SPC would not involve the export of "sensitive nuclear technology" as defined in 10 CFR 810.3.

The information contained in this letter is proprietary to Siemens and we respectfully request that DOE as well as the other Federal departments or agencies involved in the interagency review process, treat the contents of this letter accordingly to the maximum extent permitted by law.

Your timely and prompt response to this request will be appreciated. If you need further information, please contact J. W. Fredericks of our Law Department at (206) 453-4345.

Very truly yours,

David G. McAlees

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DOE ANALYSIS OF SIEMENS PART 810 REQUEST TO TRANSFER URANIUM HEXAFLUORIDE CONVERSION TECHNOLOGY TO RUSSIA (94RS001)

The Department of Energy (DOE) has received a 10 CFR Part 810 request from Siemens Power Corporation for authorization to transfer to Russia technology for the conversion of uranium hexafluoride to uranium dioxide, the initial step in the production of uranium dioxide nuclear fuel.

Siemens Power, a subsidiary of Siemens AG of Germany, operates a nuclear fuel fabrication plant in Richland, Washington.

According to the request, Siemens Power and Siemens AG intend to submit to Techsnabexport, the trading organization of the Russian Ministry for Atomic Power, a proposal under which:

- Siemens Power would provide to Techsnabexport its proprietary dry conversion technology, which is now in place at Siemens Power's German affiliate Advanced Nuclear Fuels GmbH and is currently being installed at the Siemens Power fuel fabrication plant in Richland, Washington.

- Siemens AG would supply a package of its own proprietary technology, design, project management, training and technical support services, and specialized plant process equipment to Techsnabexport's fuel fabrication facility in Moscow, which produces uranium fuel assemblies for VVER and RBMK power reactors. Among the Siemens AG elements in the package would be assistance enabling use of the Siemens Power conversion technology and technology for manufacturing uranium dioxide into nuclear fuel pellets.

Since Siemens AG is not subject to U.S. laws and regulations, only Siemens Power's proprietary conversion technology is subject to Part 810 authorization.

A more detailed description of the proposal may be found in Siemens Power's March 16, 1994, letter of application at Enclosure 1.

In reviewing the Siemens Power request, DOE staff took into consideration the following factors specified in section 10 of Part 810:

1. Whether the United States has an agreement for nuclear cooperation with the nation or group of nations involved.

   Russia has assumed the Soviet Union's obligations under the U.S.-Soviet Agreement for Scientific and Technical Cooperation in the Peaceful Uses of Atomic Energy and the Memorandum of Cooperation in the field of civilian nuclear reactor safety. A Working Group operating under this Memorandum of Cooperation addresses initiatives to help in increasing the operational safety of nuclear power plants in the former Soviet Union and Eastern Europe.

2. Whether the country involved is a party to the Treaty on the Nonproliferation of Nuclear Weapons (NPT), or is a country for which the Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco) is in force.

   Russia has replaced the Soviet Union as a party to the NPT and Protocol II of the Treaty of Tlatelolco.

3. Whether the country involved has entered into an agreement with the International Atomic Energy Agency (IAEA) for the application of safeguards on all its nuclear facilities.

   Russia has replaced the Soviet Union as a party to the Soviet voluntary agreement with the IAEA for the application of safeguards to certain of its nuclear activities.

4. Whether the country involved, if it has not entered into such an agreement, has agreed to accept IAEA safeguards when applicable to the proposed activity.

   See previous comment.

5. Other nonproliferation controls or conditions applicable to the proposed activity.

   DOE staff believe the authorization should be subject to U.S. Government receipt of Russian Government assurances that:

   - Technology transferred under the authorization will be used only for the fabrication of nuclear fuel for civilian nuclear power reactors and will not be used for any military purpose.

   - Retransfer to another country of technology transferred under the authorization will be subject to prior U.S. Government consent.

6. The relative significance of the proposed activity.

   Siemens Power has informed DOE that it believes Russian use of its uranium hexafluoride/uranium dioxide conversion technology will improve the quality of Russian nuclear fuel fabrication and substantially lower costs. DOE technical experts describe the impact of the proposed transfer as primarily economic: the Siemens Power technology significantly simplifies the conversion process and generates less waste. These experts note that this could help to limit the costs of electric power in Russia and perhaps in nuclear fuel client states such as Lithuania and Ukraine.

7. The availability of comparable assistance from other sources.

Comparable assistance is available from other U.S. and foreign fabricators of nuclear fuel.

8. Any other factors that may bear upon the political, economic, or security interest of the United States, including U.S. obligations under international agreements or treaties.

Political:

The proposed Siemens Power technology transfer would be part of a larger Siemens AG package of assistance in fuel fabrication to Techsnabexport. Approval of a Part 810 authorization to include proprietary Siemens Power technology in the package could favorably affect U.S.-German relations, while denial could cause some friction.

Economic:

Siemens Power estimates the value of the total Siemens proposal on conversion technology (Siemens Power proprietary conversion technology and Siemens AG assistance in its use) at $50 million, with Siemens Power's share worth about two-thirds of the total. No estimate of the value of the larger package Siemens AG intends to offer is available.

Security:

DOE staff believe the conditions cited in Item 5 would adequately address any security or proliferation concerns raised by the Siemens request.

Recommendation:

Based on the foregoing analysis, DOE staff believe that approval of the Siemens Power request would not be inimical to the interest of the United States and recommend that the Secretary grant a Part 810 authorization subject to the cited conditions.

Ms. Trisha Dedik
Director
Export Control Operations Division
Office of Export Control
and International Safeguards
U.S. Department of Energy
Washington, DC 20585

Dear Ms. Dedik:

This is in response to your letter of April 4 requesting the views of the Nuclear Regulatory Commission on a request, under 10 CFR Part 810, from Siemens Power Corporation to transfer to Russia technology for the conversion of uranium hexafluoride to uranium dioxide (94RS001).

The Commission understands that the authorization will be conditioned to require Russian government assurances that the technology transferred will be used only for the fabrication of nuclear fuel for civilian nuclear power reactors and will not be used for any military purpose; and that retransfer to another country of this technology will be subject to prior U.S. Government consent.

Based on these understandings, and contingent upon the other reviewing agencies not objecting, the Commission does not object to the subject authorization.

Sincerely,

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

ATTACHMENT 2