

**UNOFFICIAL COMPOSITE TEXT  
OF THE UNITED STATES-RUSSIAN FEDERATION 2000 PLUTONIUM  
MANAGEMENT AND DISPOSITION AGREEMENT , AS AMENDED**

Introductory Note

*The Agreement between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation was signed at Moscow and Washington on 29 August and 1 September 2000 and entered into force on 13 July 2011 (hereinafter the “PMDA”).*

*Two Protocols amending the PMDA were signed on 15 September 2006 and 13 April 2010. These two Protocols also entered into force on July 13, 2011.*

*The full, separate texts of the PMDA, the 2006 Protocol, and the 2010 Protocol are available electronically at <http://www.state.gov/t/isn/trty/index.htm>. The unsigned, unofficial working composite of the English text, set forth below, fully incorporates the two Protocols to provide a more useful and readable complete reference document.*

**AGREEMENT  
BETWEEN  
THE GOVERNMENT OF THE UNITED STATES OF AMERICA  
AND  
THE GOVERNMENT OF THE RUSSIAN FEDERATION  
CONCERNING THE MANAGEMENT AND DISPOSITION  
OF PLUTONIUM DESIGNATED AS NO LONGER REQUIRED  
FOR DEFENSE PURPOSES AND RELATED COOPERATION**

The Government of the United States of America and the Government of the Russian Federation, hereinafter referred to as the Parties,

Guided by:

The Joint Statement of Principles for Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes, signed by the President of the United States of America and the President of the Russian Federation on September 2, 1998, affirming the intention of each country to remove by stages approximately 50 metric tons of plutonium from their nuclear weapons programs and to convert this plutonium into forms unusable for nuclear weapons;

Taking into account:

The Agreement between the Government of the United States of America and the Government of the Russian Federation on Scientific and Technical Cooperation in the Management of Plutonium That Has Been Withdrawn from Nuclear Military Programs, signed on July 24, 1998 (hereinafter referred to as the Scientific and Technical Cooperation Agreement);

Continuation by the Parties of their cooperation within the framework of the Scientific and Technical Cooperation Agreement and the importance of that work for making decisions concerning technologies for plutonium conversion and mixed uranium-plutonium fuel fabrication, as well as for reactor modification for the use of such fuel;

The statement of the President of the United States of America on March 1, 1995, announcing that 200 tons of fissile material will be withdrawn from the U.S. nuclear stockpile and directing that these materials will never again be used to build a nuclear weapon;

The statement of the President of the Russian Federation to the 41<sup>st</sup> Session of the General Conference of the International Atomic Energy Agency, on September 26, 1997, on step-by-step removal from nuclear military programs of up to 500 tons of highly enriched uranium and up to 50 tons of plutonium released in the process of nuclear disarmament; and

The Joint Statement by the Parties concerning non-separation of weapon-grade plutonium in connection with the signing of this Agreement;

Have agreed as follows:

## **Article I**

For the purposes of this Agreement, the terms specified below are defined as follows:

1. "Weapon-grade plutonium" means plutonium with an isotopic ratio of plutonium 240 to plutonium 239 of no more than 0.10.
2. "Disposition plutonium" means weapon-grade plutonium that has been
  - a) withdrawn from nuclear weapon programs,
  - b) designated as no longer required for defense purposes, and
  - c) declared in the Annex on Quantities, Forms, Locations, and Methods of Disposition, which is an integral part of this Agreement.
3. "Blend stock" means any plutonium, other than disposition plutonium, that is mixed with disposition plutonium.
4. "Spent plutonium fuel" means fuel that was manufactured with disposition plutonium and irradiated in nuclear reactors.

5. "Conversion product" means disposition plutonium, prior to its irradiation in a reactor, that:
  - a) has been mixed or not mixed with blend stock,
  - b) has been received at an entrance of a fuel fabrication facility, and
  - c) has no properties that are considered by the United States of America as classified information or by the Russian Federation as state secret.
6. "Disposition facility" means any fuel fabrication facility, any nuclear reactor, and any storage facility that stores, processes, or otherwise uses conversion product or spent plutonium fuel.

## **Article II**

1. Each Party shall, in accordance with the terms of this Agreement, dispose of no less than thirty-four (34) metric tons of disposition plutonium.
2. Each Party's declaration on quantities, forms, locations, and methods of disposition for disposition plutonium is set forth in the Annex on Quantities, Forms, Locations, and Methods of Disposition.
3. The Parties shall cooperate in the management and disposition of disposition plutonium, implementing their respective disposition programs in parallel to the extent practicable.
4. The reciprocal obligations set forth in paragraph 1 of this Article shall not prejudice consideration by the Parties of what additional quantities of plutonium may be designated by each Party in the future as no longer required for defense purposes.
5. The Parties shall cooperate with a view to ensuring that additional quantities of weapon-grade plutonium that may be withdrawn from nuclear weapon programs and designated in the future by the Parties as no longer required for defense purposes are:
  - a) brought under and disposed of in accordance with the terms of this Agreement; or
  - b) subject to other measures as agreed by the Parties in writing that provide for comparable transparency and disposition.
6. Each Party shall have the right to mix blend stock with disposition plutonium provided that for nuclear reactor fuel containing disposition plutonium the mass of blend stock shall:
  - a) be kept to a minimum, taking into account the protection of classified information, safety and economic considerations, and obligations of this Agreement; and

- b) in no case exceed twelve (12) percent of the mass of disposition plutonium with which it is mixed.

The resulting mixture of disposition plutonium and blend stock shall be weapon-grade plutonium.

- 7. Each Party's disposition plutonium shall count toward meeting the thirty-four (34) metric ton obligation set forth in paragraph 1 of this Article once the other Party confirms in accordance with agreed procedures that the spent plutonium fuel meets the criteria specified in the Annex on Technical Specifications, which is an integral part of this Agreement. Blend stock shall not count toward meeting that thirty-four (34) metric ton obligation.

### **Article III**

- 1. Disposition shall be by irradiation of disposition plutonium as fuel in nuclear reactors or any other methods that may be agreed by the Parties in writing.
- 2. The following are the nuclear reactors that may be used for irradiation of conversion product under this Agreement:
  - a) in the United States of America – light water reactors;
  - b) in the Russian Federation – the BN-600 fast neutron reactor and the BN-800 fast neutron reactor;
  - c) any Gas Turbine Modular Helium Reactor (GT-MHR) that may be build by either Party; and
  - d) any other nuclear reactors agreed in writing by the Joint Consultative Commission established pursuant to Article XII of this Agreement.
- 3. The radial blanket of the BN-600 reactor will be completely removed before disposition of conversion product begins in it, and the BN-800 reactor will be operated with a breeding ratio of less than one for the entire term of this Agreement.

### **Article IV**

Each Party shall take all reasonable steps to complete construction and modifications, and to begin operation, of the reactors referred to in subparagraphs 2(a) and 2(b) of Article III of this Agreement and other facilities necessary to achieve a disposition rate of no less than 1.3 metric tons per year of disposition plutonium within as short a time as possible, in accordance with this Agreement, including the milestones set forth in the Annex on Key Program Elements, which is an integral part of this Agreement.

## **Article V**

1. Each Party shall seek to increase the disposition rate referred to in Article IV of this Agreement to the extent practicable, consistent with the strategy of that Party for the development of nuclear energy and this Agreement.
2. To support research and development of the GT-MHR, the Parties will continue such cooperation on an equal basis, in accordance with Article IX of this Agreement and at funding levels agreed in writing by the Executive Agents designated by the Parties pursuant to Article XI of this Agreement.

## **Article VI**

1. Conversion product, as well as any other plutonium, once received at any disposition facility, shall not be used for the manufacture of nuclear weapons or any other nuclear explosive device, for research, development, design or testing related to such devices, or for any other military purpose.
2. Conversion product, once received at any disposition facility, shall not be exported to a third country, including for disposition, except by agreement in writing of the Parties and subject to international safeguards and other applicable international agreements or arrangements, including the Convention on the Physical Protection of Nuclear Material of October 26, 1979.
3. Neither Party shall reprocess spent plutonium fuel until such time as that Party has fulfilled its obligation set forth in paragraph 1 of Article II of this Agreement.
4. Neither Party shall reprocess any other nuclear fuel irradiated in a disposition facility or material from the radial blanket of a disposition facility until such time as that Party has fulfilled its obligation set forth in paragraph 1 of Article II of this Agreement, except for reprocessing:
  - a) uranium fuel assemblies that have been irradiated in the BN-600 or uranium fuel assemblies that have been irradiated in light water reactors that are disposition facilities, if this does not result in the accumulation of new separated weapon-grade plutonium by itself or in combination with other materials; and
  - b) up to thirty (30) percent of the assemblies with fuel containing plutonium prior to irradiation that have been irradiated in the BN-800, or in light water reactors that are disposition facilities, for purposes of implementing research and development programs for technologies for closing the nuclear fuel cycle in the Russian Federation and the United States of America, respectively, provided that such assemblies do not contain disposition plutonium and such reprocessing does not result in the accumulation of new separated weapon-grade plutonium by itself or in combination with other materials.

5. Disposition facilities shall be utilized only in accordance with the terms and conditions of this Agreement for achieving and maintaining a disposition rate of no less than 1.3 metric tons of disposition plutonium per year.

## **Article VII**

1. Each Party shall have the right to conduct and the obligation to receive and facilitate monitoring and inspection activities in accordance with this Article and the Annex on Monitoring and Inspections, which is an integral part of this Agreement, in order to confirm that the terms and conditions of this Agreement with respect to disposition plutonium, blend stock, conversion product and spent plutonium fuel, and disposition facilities are being met.
2. Monitoring and inspections under this Agreement shall be conducted in accordance with the Annex on Monitoring and Inspections and procedures developed pursuant to that Annex.
3. Each Party, in cooperation with the other Party, shall begin consultations with the International Atomic Energy Agency (IAEA) at an early date and undertake all other necessary steps to conclude appropriate agreements with the IAEA to allow it to implement verification measures with respect to each Party's disposition program.
4. If agreed in writing by the Parties, the exercise of each Party's right set forth in paragraph 1 of this Article may be suspended in whole or in part by the application of equivalent IAEA verification measures under the agreements referred to in paragraph 3 of this Article. The Parties shall, to the extent practicable, avoid duplication of effort of monitoring and inspection activities implemented under this Agreement and appropriate agreements with the IAEA.

## **Article VIII**

1. Each Party shall be responsible within the territory of the United States of America and the Russian Federation, respectively, for:
  - a) ensuring safety and ecological soundness of disposition plutonium activities under the terms of this Agreement; and
  - b) effectively controlling and accounting for disposition plutonium, blend stock, conversion product and spent plutonium fuel, as well as providing effective physical protection of such material and facilities containing such material taking into account the recommendations published in the IAEA document INFCIRC/225/Rev. 4, The Physical Protection of Nuclear Material, or a subsequent revision accepted by the Parties.

## Article IX

1. The Government of the United States of America shall make available up to four hundred (400) million United States dollars for those activities to be undertaken in the Russian Federation pursuant to this Agreement that are set forth in the chart in the Attachment to the Annex on Assistance and such other funds as may be agreed for cooperation pursuant to paragraph 2 of Article V of this Agreement, subject to the U.S. budgetary review process and the availability of appropriated funds.
2. Assistance provided by the Government of the United States of America may include research and development, scientific and technical experimentation, design for facility construction or modification, delivery of general and specialized equipment and of replacement and spare parts, installation services, licensing and certification costs, initial operations and testing, aspects of facility operations, and other assistance directly related to the management and disposition of plutonium in accordance with the provisions of this Agreement, but shall not include any assistance for construction of the BN-800 reactor.
3. The Executive Agents will undertake joint efforts to seek other donor funding that would be used to reduce Russian outlays for, and would facilitate timely implementation of, plutonium disposition in the BN-800. Implementation of the Russian plutonium disposition program will not be dependent on the availability or unavailability of any additional donor funding beyond that referred to in paragraph 1 of this Article.
4. Equipment, supplies, materials, services, and other assistance provided or acquired by the Government of the United States of America, its contractors, subcontractors, and their personnel, for the implementation of this Agreement in the Russian Federation, are considered free technical assistance.
5. Assistance provided by the Government of the United States of America for activities to be undertaken in the Russian Federation pursuant to this Agreement shall be provided in accordance with the terms and conditions set forth in this Agreement, including the Annex on Assistance, which is an integral part of this Agreement.
6. The activities of each Party under this Agreement shall be subject to the availability of appropriated funds.
7. If the Government of the United States of America decides not to begin, or to terminate, its assistance as set forth in paragraph 1 of this Article (excluding funds pursuant to Article V of this Agreement), it shall so notify the Government of the Russian Federation of this decision through diplomatic channels and the Parties shall immediately start consultations.
8. In the event assistance is not resumed within ninety (90) days from the date of a decision referred to in paragraph 7 of this Article, the Government of the Russian Federation shall have the right, consistent with the obligations in paragraph 10 of this Article, to suspend,

modify or terminate implementation activities under the Agreement as it deems appropriate, including those activities referred to in paragraph 3 of Article III of this Agreement.

9. If the Government of the Russian Federation exercises the right referred to in paragraph 8 of this Article:
  - a) It shall promptly notify the Government of the United States of America through diplomatic channels of the nature and timing of any suspended, modified or terminated activities; and
  - b) The Parties shall promptly begin consultations concerning their continued implementation of their disposition programs and whether to amend or terminate this Agreement pursuant to Article XIII.
10. During the consultations referred to in paragraphs 7 and 9 of this Article, except as otherwise agreed by the Parties in writing, neither Party shall take any measures that:
  - a) could break the continuity in the other Party's knowledge of disposition plutonium or disposition facilities, that are subject to monitoring and inspections under this Agreement, in such a way as to hinder that other Party from confirming that the use of that disposition plutonium or those disposition facilities does not contradict this Agreement; or
  - b) would contradict the terms and conditions for assistance that had been provided under this Agreement.

### **Article X**

1. Under this Agreement, no United States classified information or Russian Federation state secret information shall be exchanged, except as may be agreed in writing by the Parties for purposes of exchanging information pursuant to this Agreement related to the quantities and locations of disposition plutonium and blend stock at disposition facilities.
2. The information transmitted under this Agreement or developed as a result of its implementation and considered by the United States of America as "sensitive" or by the Russian Federation as "konfidentsial'naya" must be clearly designated and marked as such.
3. "Konfidentsial'naya" or "sensitive" information shall be handled in accordance with the laws of the state of the Party receiving the information, and this information shall not be disclosed and shall not be transmitted to a third party not participating in the implementation of this Agreement without the written consent of the Party that had transmitted such information.
  - a) According to the laws and regulations of the Russian Federation, such information shall be treated as "limited-distribution official information." Such information shall be protected in accordance with the laws and regulations of the Russian Federation.

- b) According to the laws and regulations of the United States of America, such information shall be treated as “foreign government information,” provided in confidence. Such information shall be protected in accordance with the laws and regulations of the United States of America.
4. Information transmitted under this Agreement shall be used solely in conformance with this Agreement.
5. The Parties shall minimize the number of persons having access to information that is designated “konfidentsial’naya” or “sensitive” information in accordance with paragraph 2 of this Article.
6. The Parties shall ensure effective protection and allocation of rights to intellectual property, transferred or created under this Agreement, as set forth in this Agreement, including the Annex on Intellectual Property, which is an integral part of this Agreement.

#### **Article XI**

1. The Parties shall designate Executive Agents for implementation of this Agreement. The Executive Agent for the United States of America shall be the U.S. Department of Energy. The Executive Agent for the Russian Federation shall be the State Corporation for Atomic Energy “Rosatom”.
2. With the exception of the notification referred to in paragraph 1 of Article XIII of this Agreement, notifications between the Parties that are provided for by this Agreement shall be transmitted between the Executive Agents unless otherwise specified.
3. The Executive Agents may enter into implementing agreements and arrangements as necessary and appropriate to carry out the provisions of this Agreement. When appropriate, the Executive Agents may utilize other agencies or entities to assist in the implementation of this Agreement, such as government agencies, academies, universities, science and research centers, institutes and institutions, and private sector firms.

#### **Article XII**

1. The Parties shall establish a Joint Consultative Commission for this Agreement to:
  - a) consider and resolve questions regarding the interpretation or application of this Agreement;
  - b) consider additional measures as may be necessary to improve the viability and effectiveness of this Agreement; and

- c) consider and resolve such other matters as the Parties may agree are within the scope of this Agreement.
2. The Joint Consultative Commission shall meet within twenty-one (21) days of a request of either Party or its Executive Agent.
3. Each Party shall designate its Co-Chairman to the Joint Consultative Commission. Each Party shall notify the other Party of its designated Co-Chairman in writing within thirty (30) days after entry into force of this Agreement. Decisions of the Joint Consultative Commission shall be made on the basis of consensus.

### **Article XIII**

1. This Agreement shall be applied provisionally from the date of signature and shall enter into force on the date of the last written notification that the Parties have fulfilled the national procedures required for its entry into force.
2. This Agreement may only be amended by written agreement of the Parties, except that the Annex on Key Program Elements may be updated as specified in paragraph 5 of that Annex.
3. This Agreement shall terminate on the date the Parties exchange notes confirming that thirty-four (34) metric tons of disposition plutonium have been disposed by each Party in accordance with this Agreement, unless terminated earlier by written agreement of the Parties.
4. If additional quantities of weapon-grade plutonium are brought under this Agreement pursuant to paragraph 5 of Article II of this Agreement, this Agreement shall terminate on the date the Parties exchange notes confirming that thirty-four (34) metric tons of disposition plutonium and all such additional quantities of weapon-grade plutonium have been disposed in accordance with this Agreement, unless terminated earlier by written agreement of the Parties.
5. Notwithstanding termination of this Agreement in accordance with paragraph 3 or 4 of this Article:
  - a) neither Party shall use plutonium, once it is received at any disposition facility, for the manufacture of nuclear weapons or any other nuclear explosive device, for research, development, design or testing related to such devices, or for any other military purpose;
  - b) neither Party shall export to a third country plutonium, once it is received at any disposition facility, except by agreement in writing of the Government of the United States of America and the Government of the Russian Federation and subject to international safeguards and other applicable international agreements or arrangements, including INFCIRC/274/Rev. 1, The Convention on the Physical Protection of Nuclear Material;

- c) neither Party shall (i) use any plutonium separated from spent plutonium fuel for the manufacture of nuclear weapons or any other nuclear explosive device, for research, development, design or testing related to such devices, or for any other military purpose, or (ii) export spent plutonium fuel or any plutonium separated from spent plutonium fuel to a third country, except by agreement in writing of the Government of the United States of America and the Government of the Russian Federation and subject to international safeguards and other applicable international agreements or arrangements, including INFCIRC/274/Rev. 1, The Convention on the Physical Protection of Nuclear Material;
  - d) each Party shall continue to effectively control and account for spent plutonium fuel, as well as to provide effective physical protection of such material taking into account the recommendations published in the IAEA document INFCIRC/225/Rev. 4, The Physical Protection of Nuclear Material, or subsequent revisions accepted by the Parties;
  - e) the obligations set forth in Article X of this Agreement, paragraphs 6, 7 and 9 of this Article, paragraphs 5, 6, and 7 of the General Assistance Section of the Annex on Assistance, and the Liability Section of the Annex on Assistance shall remain in force unless otherwise agreed in writing by the Government of the United States of America and the Government of the Russian Federation;
  - f) the Parties shall consult concerning implementation of existing contracts and projects between the Parties and settlement of any outstanding costs between the Parties; and
  - g) for any activities under this Agreement and any importation or exportation by the Government of the United States of America, its personnel, contractors and contractors' personnel of equipment, supplies, materials or services that had been required to implement this Agreement, no retroactive taxes shall be imposed in the Russian Federation.
6. At an appropriate early date, but in any event not fewer than five (5) years prior to termination of this Agreement, the Parties shall begin consultations to determine what international monitoring measures shall be applied, after termination, to spent plutonium fuel and disposition facilities, as well as to any reprocessing of spent plutonium fuel. In the event the Parties do not reach agreement on such monitoring measures prior to the termination of this Agreement, each Party shall:
- a) make such fuel available for inspection by the other Party under established procedures, if the other Party has a question or concern regarding changes in its location or condition; and
  - b) unless it can be demonstrated that such facilities have been decommissioned and can no longer be operated, or will be included in the list of declared facilities that are eligible for inspection by the IAEA, make such facilities available for inspection by the other Party

under established procedures, if the other Party has a question or concern regarding the use of such facilities.

7. No spent plutonium fuel shall be reprocessed by either Party after termination of this Agreement unless such reprocessing is subject to monitoring agreed by the Parties pursuant to paragraph 6 of this Article.
8. Nothing in this Agreement shall alter the rights and obligations of the Parties under the Scientific and Technical Cooperation Agreement.
9. No provision of this Agreement or its Annexes shall apply to spent plutonium fuel located at, or to facilities containing spent plutonium fuel located at, a site in the United States of America or the Russian Federation specified as a site for deep geologic disposal of spent fuel, provided that such spent plutonium fuel is intended ultimately for final geologic disposal at that site in accordance with the applicable laws of that Party. Each Party shall provide the other Party with a declaration of such intention and, in accordance with procedures developed under this Agreement, ensure timely written notification to the other Party of the name and location of such site, and the transfer of spent plutonium fuel to such deep geologic disposal site.

DONE at Moscow and Washington, the 29<sup>th</sup> day of August and 1<sup>st</sup> day of September, 2000, in duplicate in the English and Russian languages, both texts being equally authentic.<sup>1</sup>

FOR THE GOVERNMENT OF THE  
UNITED STATES OF AMERICA:

/s/

FOR THE GOVERNMENT OF THE  
RUSSIAN FEDERATION:

/s/

### **List of Annexes**

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<sup>1</sup> Note: The unofficial text in this document reflects the 2000 PMDA *as amended* by a 2006 Protocol, signed September 15, 2006, and a 2010 Protocol, signed April 13, 2010. Article II of the 2006 Protocol provides for entry into force “on the date of receipt of the last written notification that the Parties hereto have fulfilled the national procedures required for its entry into force.” The entry-into-force provision contained in Article 7 of the 2010 Protocol is as follows:

“This Protocol shall be applied provisionally from the date of signature and shall enter into force on the date of the last written notification that the Parties have fulfilled the national procedures required for entry into force of the Agreement, the Protocol to the Agreement between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation signed at Washington on September 15, 2006, and this Protocol.”

Annex on Quantities, Forms, Locations, and Methods of Disposition

Annex on Technical Specifications

Annex on Key Program Elements

Annex on Monitoring and Inspections

Annex on Assistance

Annex on Intellectual Property

**ANNEX  
ON  
QUANTITIES, FORMS, LOCATIONS, AND METHODS OF DISPOSITION**

This Annex to the Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation, hereinafter referred to as the Agreement, sets forth each Party's declaration of disposition plutonium.

**Section I -- Quantities and Methods of Disposition**

For the United States of America:

Quantity (metric tons)	Form	Method of Disposition
25.00	Pits and Clean Metal	Irradiation
9.00	Pits, Metal or Oxide	Irradiation

For the Russian Federation:

Quantity (metric tons)	Form	Method of Disposition
25.00	Pits and Clean Metal	Irradiation
9.00	Oxide	Irradiation

**Section II -- Forms**

1. Pits and Clean Metal: plutonium in or from weapon components or weapon parts, and plutonium metal prepared for fabrication into weapon parts.
2. Metal: plutonium in the form of metal or metal alloy.
3. Oxide: plutonium in the form of plutonium dioxide.

### **Section III -- Locations**

The Government of the United States of America declares that:

- 1) the majority of the 25 MT of “pits and clean metal” declared in Section I of this Annex will be shipped from the Pantex Plant in Texas and Savannah River Site in South Carolina to the conversion facility in the United States of America; the remainder of the “pits and clean metal” for conversion into oxide will be shipped directly from the Pantex Plant in Texas to the Los Alamos National Laboratory in New Mexico; and
- 2) all the 9 MT of “pits, metal or oxide” declared in Section I of this Annex will be shipped directly from the following facilities: the Pantex Plant in Texas, the Savannah River Site in South Carolina, the Lawrence Livermore National Laboratory in California, the Hanford Site in Washington State, or the Los Alamos National Laboratory in New Mexico.

The Government of the Russian Federation declares that:

- 1) all the “pits and clean metal” it declared in Section I of this Annex will be shipped to the conversion/blending facility in the Russian Federation under the Agreement directly from the Fissile Material Storage Facility at Mayak being constructed under the Agreement between the Department of Defense of the United States of America and the Ministry of the Russian Federation for Atomic Energy Concerning the Provision of Material, Services, and Training Relating to the Construction of a Safe, Secure and Ecologically Sound Storage Facility for Fissile Material Derived from the Destruction of Nuclear Weapons of September 2, 1993; and
- 2) all the “oxide” it declared in Section I of this Annex will be shipped directly to the conversion/blending facility in the Russian Federation from the places where such oxide was stored pursuant to the Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning Cooperation Regarding Plutonium Production Reactors, of September 23, 1997.

**ANNEX  
ON  
TECHNICAL SPECIFICATIONS**

This Annex to the Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation, hereinafter referred to as the Agreement, sets forth the criteria for determining that disposition plutonium is disposed.

**Section I -- Light Water Reactors**

Disposition plutonium irradiated under the Agreement in light water reactors shall be considered disposed when the resulting spent plutonium fuel meets the following criteria:

1. Each spent plutonium fuel assembly contains a unique identifier that demonstrates it to be a fuel assembly produced with disposition plutonium;
2. Each spent plutonium fuel assembly is irradiated to a fuel burn-up level of no less than 20,000 megawatt days thermal per metric ton of heavy metal; and
3. The radiation level from each spent plutonium fuel assembly is such that it will become no less than 1 sievert per hour one meter from the accessible surface at the centerline of the assembly 30 years after irradiation has been completed.

**Section II – BN-600 and BN-800 Reactors**

Disposition plutonium shall be considered disposed if the spent plutonium fuel resulting from irradiation in the BN-600 and BN-800 reactors meets the four criteria below.

1. Each spent plutonium fuel assembly contains a unique identifier that demonstrates it to be a fuel assembly produced with conversion product.
2. Each spent plutonium fuel assembly is irradiated to an average fuel burn-up level of no less than:
  - a) five (5) percent of heavy-metal atoms for assemblies from the BN-600 reactor;
  - b) three and nine-tenths (3.9) percent of heavy-metal atoms for assemblies from the BN-800 reactor during the two-to-three year reactor commissioning stage; and
  - c) four and one-half (4.5) percent of heavy-metal atoms for assemblies from the BN-800

reactor during the stage of operation of the reactor with rated parameters.

3. The average fuel burn-up level of any batch of such spent plutonium fuel assemblies discharged during the same refueling outage from the reactor core is no less than:
  - a) six and one-half (6.5) percent of heavy-metal atoms for the BN-600 reactor;
  - b) five (5) percent of heavy metal atoms for the BN-800 reactor during the two-to-three year reactor commissioning stage; and
  - c) six (6) percent of heavy metal atoms for assemblies from the BN-800 reactor during the stage of operation of the reactor with rated parameters.
4. The radiation level from each spent plutonium fuel assembly is such that it will become no less than 1 sievert per hour one meter from the accessible surface at the centerline of the assembly 30 years after irradiation has been completed.

### **Section III -- Other Reactors**

Disposition plutonium irradiated under the terms of the Agreement in reactors referred to in paragraph 2 of Article III of the Agreement, but which are not specified in Sections I and II of this Annex, shall be considered disposed when the resulting spent plutonium fuel meets criteria that have been approved in writing by the Joint Consultative Commission.

**ANNEX  
ON  
KEY PROGRAM ELEMENTS**

This Annex to the Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation, hereinafter referred to as the Agreement, sets forth key elements of the program for disposition of excess weapon-grade plutonium of each Party.

1. The program of the Government of the United States of America will be based on irradiating disposition plutonium that is part of conversion product, contained in MOX fuel, in at least four (4) light water reactors with the following targets:
  - a) Completion of construction of the Mixed Oxide Fuel Fabrication Facility and the start of its operation is targeted for 2016; and
  - b) Disposition in the referenced reactors is targeted to begin in 2018.
2. The program of the Government of the Russian Federation will be based on irradiating disposition plutonium that is part of conversion product, contained in MOX fuel, in the BN-600 and BN-800 fast neutron reactors with the following targets:
  - a) Completion of construction of the BN-800 is targeted for 2012-2013 and completion of modification of the BN-600 for the use of MOX fuel is targeted for 2013-2014. Completion of the construction of the facility for fabrication of MOX fuel for the referenced reactors is targeted for 2011-2012; and
  - b) Disposition in the referenced reactors is targeted to begin in 2018.
3. Successful development of the GT-MHR advanced gas-cooled high-temperature reactor may create additional possibilities for increasing the disposition rate in the Russian Federation in 2019-2021.
4. If a Party begins to dispose of disposition plutonium prior to the target dates in paragraphs 1 and 2 of this Annex, such plutonium will count toward meeting the thirty-four (34) metric ton obligation set forth in paragraph 1 of Article II of the Agreement if the criteria specified in the Annex on Technical Specifications are met and monitoring and inspection measures agreed in writing by the Parties are applied to disposition activities.
5. The Executive Agents shall provide each other in writing:
  - a) status reports, on a regular basis agreed by them, on progress in their programs for the disposition of excess weapon-grade plutonium; and

- b) updates as necessary to the information provided in paragraphs 1 and 2 of this Annex, to include the reasons for the update, within 90 days after the changes that necessitated that update occur.
6. If a Party considers it necessary to change facilities that it is using for plutonium disposition, it shall notify the other Party at least 90 days in advance of such change and shall include therein a detailed plan as to how it will fulfill its disposition obligations. It shall also provide the other Party funds equivalent to any funds or other assistance provided by the other Party pursuant to the Agreement for a facility that will no longer be used for disposition under the Agreement, unless otherwise agreed in writing by the Parties.

## ANNEX ON MONITORING AND INSPECTIONS

This Annex sets forth principles and provisions to govern the development of procedures for, and the implementation of, monitoring and inspection activities pursuant to Article VII of the Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation, hereinafter referred to as the Agreement.

### Section I -- Definitions

For purposes of the Agreement, the following definitions shall apply:

1. "Monitoring" means a set of measures and activities, including inspections, use of special equipment, and review of documents (records and reports), that together provide data to the monitoring Party on disposition plutonium, blend stock, conversion product, spent plutonium fuel, or disposition facilities.
2. "Inspection" means a monitoring activity conducted by the monitoring Party on-site at a facility in order to obtain data and make observations on disposition plutonium, blend stock, conversion product, spent plutonium fuel, or disposition facilities.

### Section II -- General Principles

1. *Scope*: Monitoring and inspection activities shall be conducted in accordance with the Agreement, this Annex, and procedures to be agreed by the Parties pursuant to Section V of this Annex.
2. *Purpose*: In accordance with paragraph 1 of Article VII of the Agreement, monitoring and inspection activities shall be designed and implemented to ensure that the monitoring Party has the ability independently to confirm that the terms and conditions of the Agreement with respect to disposition plutonium, blend stock, conversion product, spent plutonium fuel, and disposition facilities are being met.
3. *Systems of Control and Accounting*: The Parties shall implement national systems of control and accounting for nuclear materials to account for and keep records of disposition plutonium, blend stock, and spent plutonium fuel. Operators of disposition facilities shall use this national system of control and accounting in order to prepare agreed data to be included in their reports. Such reports shall be provided to the monitoring Party according to procedures to be developed pursuant to Sections III and V of this Annex.

4. *Inspections*: The number, intensity, duration and timing of inspections, and the intensity of other monitoring activities, shall be kept to the minimum consistent with the effective implementation of agreed monitoring activities pursuant to the Agreement and this Annex. Procedures for monitoring shall be designed so as to minimize, to the extent possible, interference with the operation of facilities, and to avoid affecting their nuclear safety or the safety of inspectors. Specific inspection procedures shall be developed pursuant to Section V of this Annex.
5. Inspectors shall be permitted access to disposition facilities sufficient for them to be able to attain the agreed goals of the inspection, using agreed procedures designed to avoid disclosure of United States classified information and Russian Federation state secret information in accordance with the provisions of paragraph 1 of Article X of the Agreement. The monitored Party shall take every necessary measure, in accordance with agreed procedures, to ensure the access of the monitoring Party's inspectors to those facilities, and shall undertake to provide all necessary conditions for successful inspection implementation.
6. Each Party shall treat with due respect the inspectors of the other Party present on its territory in connection with monitoring activities under the Agreement and shall take all appropriate measures, consistent with its national law, to prevent any attack on the person, freedom and dignity of such personnel.
7. Each Party, in accordance with agreed procedures, shall facilitate the procurement of required services and use of equipment, the entry and exit of personnel of the other Party into and out of its territory, and the import into and export from its territory of materials and equipment for carrying out monitoring and inspection activities in accordance with the Agreement including this Annex.
8. *Relationship to Other Monitoring Regimes*: For disposition plutonium that comes from a facility subject to another U.S.-Russian bilateral monitoring regime, or an international monitoring regime that has been agreed by the Parties, monitoring under the Agreement shall take into account that other monitoring regime, and shall not conflict with the transfer requirements of that other monitoring regime. In developing monitoring and inspection procedures in accordance with the Agreement, the Parties should avoid duplicating the efforts of such other monitoring regimes.
9. *Confirmation of Pu-240/Pu-239 Ratio*: The monitoring Party shall be allowed to confirm, using an agreed method, that the Pu-240/Pu-239 ratio of the conversion product is no greater than 0.10. Confirmation of this ratio shall occur using agreed methods based on measurement of the isotopic composition of the conversion product upon its receipt at a fuel fabrication facility.
10. *Conduct of Inspections*: Inspection activities under the Agreement shall not be conducted on disposition plutonium or conversion product before it has been received as conversion product at a fuel fabrication facility.

11. *Confirmation of Fulfillment of the Conditions for Blending:* The monitoring Party shall have the right to confirm that the mass of any blend stock used by the other Party does not exceed what is allowed by paragraphs 6 and 7 of Article II of the Agreement, or to ascertain the absence of such blending. This confirmation shall occur using agreed methods based on measurement of the isotopic composition of the conversion product upon its receipt at a fuel fabrication facility. The criteria for fulfillment of the condition set forth in subparagraph 6(b) of Article II of the Agreement are as follows:
  - a) in the 34.000 metric tons of plutonium contained in unblended conversion product in the United States of America, the Pu-240 content shall not exceed 2210 kilograms and the Pu-238 content shall not exceed 7 kilograms;
  - b) in the 38.080 metric tons of plutonium contained in blended conversion product in the Russian Federation, the Pu-240 content shall not exceed 3000 kilograms and the Pu-238 content shall not exceed 50 kilograms.
12. *Procedures at Specific Facilities:* Each Party shall provide and update as appropriate a list of its disposition facilities as their specific locations are determined. The monitoring Party shall have the right to conduct monitoring activities, including inspections and other measures, at disposition facilities. These measures shall provide continuity of knowledge of disposition plutonium and blend stock necessary for the monitoring Party to determine whether the objectives of the Agreement are being met.
13. Pursuant to paragraph 1 of Article X of the Agreement, inspectors shall not have access to any parameters that are United States classified information or Russian Federation state secret information because of their relationship to nuclear weapon design or manufacturing.
14. *Plutonium at a Disposition Facility:* Any plutonium at a disposition facility shall have no properties that are considered by the United States of America as classified information or by the Russian Federation as state secret.
15. The monitoring Party shall have the right to confirm the mass and relevant isotopic composition of the conversion product (even if it contains United States “sensitive” information or Russian Federation “konfidentsial’naya” information), using agreed measurement procedures, without the application of “yes/no” techniques or information barriers.
16. *Design Information:* For the purpose of developing agreed measures pursuant to Section V of this Annex, the Parties shall identify an agreed set of design information to be provided to the monitoring Party for disposition facilities. Once the set of design information is identified, that information shall be provided to the monitoring Party at an agreed time. The monitoring Party shall be allowed access to disposition facilities before the beginning of their operation in a disposition mode and thereafter, as necessary to confirm design information, using agreed procedures.

17. *Unexpected Circumstances*: Procedures developed pursuant to Section V of this Annex shall include provisions, including monitoring activities as appropriate, concerning unexpected technical circumstances.

### **Section III -- Records and Reports**

1. Based on its national system of control and accounting, each Party shall periodically submit to the other Party reports that were agreed upon in accordance with Section V of this Annex. Such reports shall at a minimum contain information on the quantity of conversion product and spent plutonium fuel at each disposition facility, as well as the quantity of conversion product and spent plutonium fuel received at or shipped from that facility.
2. The Parties shall develop agreed methods of recording for conversion product and spent plutonium fuel and the formats of reports on disposition activities, to be provided to the monitoring Party.

### **Section IV -- General Approach to Confirm Disposition of Disposition Plutonium**

1. The monitoring Party shall have the right, using agreed procedures, to confirm that spent plutonium fuel assemblies meet the criteria specified in the Annex on Technical Specifications.
2. Monitoring rights on spent plutonium fuel shall include procedures, designed with a view to minimize costs, that will allow confirmation that such fuel remains in its declared locations.

### **Section V -- Development of Specific Procedures and Administrative Arrangements**

1. The Parties shall seek to complete as soon as possible an agreed set of detailed measures, procedures, and administrative arrangements, consistent with the terms of the Agreement (including this Annex), for monitoring and inspections of disposition plutonium, blend stock, conversion product, spent plutonium fuel, and disposition facilities. This set of detailed measures, procedures, and administrative arrangements shall be completed in writing prior to beginning operation of industrial-scale disposition facilities in the Russian Federation. The development of these measures, procedures, and administrative arrangements shall be coordinated at an early stage with, and be made compatible with, the design effort for the disposition facilities.
2. Procedures agreed pursuant to paragraph 1 of this Section shall specify, among other things, the rights and responsibilities of the facility personnel and inspectors, types of and content of reports, how measurements are to be done, and how independent conclusions are to be arrived at, including, among other things, appropriate procedures for applying containment and surveillance measures, and technical goals for monitoring, with a view to minimizing costs. These agreed procedures shall include, but not be limited to, measures to:

- a) provide assurance that at all times prior to completion of the disposition of the thirty-four (34) metric tons of disposition plutonium under the Agreement, all conversion product or spent plutonium fuel entering or leaving disposition facilities does so in accordance with the Agreement, appropriately taking into account waste (as necessary);
- b) confirm the fulfillment of the criteria specified in the Annex on Technical Specifications;  
and
- c) allow each Party to distinguish spent plutonium fuel from other spent fuel that may be located in the same storage area.

**ANNEX  
ON  
ASSISTANCE**

This Annex to the Agreement between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation, hereinafter referred to as the Agreement, sets forth the agreed procedures and provisions to govern assistance provided by the Government of the United States of America for the activities to be undertaken in the Russian Federation as provided for in Articles V and IX of the Agreement.

**Section I -- General Assistance Provisions**

1. The steps and estimated funding levels for assistance provided by the Government of the United States of America are set forth in the attachment to this Annex.
2. All equipment, supplies, materials or other assistance provided under the Agreement shall be delivered to mutually-agreed points of entry, unless otherwise agreed in writing. The provider of such equipment, supplies, materials or other assistance shall notify the recipient of the planned date of arrival and point of entry in advance. The recipient shall take possession of all such equipment, supplies, materials and other assistance upon its arrival at the point of entry, unless otherwise agreed in writing.
3. Title to all equipment and facilities provided under the Agreement to, and accepted by, the Government of the Russian Federation, or entities under its jurisdiction or control, shall pass to the Government of the Russian Federation or entities under its jurisdiction or control unless agreed otherwise in writing by the Parties.
4. Equipment, supplies, materials, services, technology or other assistance provided under the Agreement shall be utilized only in accordance with the terms and purposes of the Agreement.
5. Equipment, supplies, materials, services, technology, or other assistance provided under the Agreement shall not be used for the production of nuclear weapons or any other nuclear explosive device, for research or development, design or testing related to such devices, or for any other military purpose.
6. Equipment, supplies, materials, services, technology, or other assistance provided under the Agreement, or developed with assistance provided under the Agreement, shall not be exported, re-exported, or transferred from the jurisdiction of the recipient without the written consent of the Parties.
7. Prior to the export to a third party of any equipment, supplies, materials, services, technology, or other assistance provided under the Agreement, the Parties by mutual

agreement in writing shall define the conditions in accordance with which such items will be exported, re-exported, or transferred from the jurisdiction of the third party.

8. The Government of the Russian Federation notes that the Government of the United States of America intends to seek accreditation, as administrative and technical staff of the Embassy of the United States of America in Moscow, of United States Government personnel present in the territory of the Russian Federation on a regular basis for activities related to assistance provided under the Agreement, and hereby confirms that the Government of the Russian Federation will accredit such personnel. Upon entry into force of the Agreement, the Parties will consult on the overall number of United States Government assistance-related personnel envisioned for activities under the Agreement. Each Party shall treat with due respect the unaccredited personnel of the other Party present on its territory in connection with activities related to assistance under the Agreement and shall take all appropriate measures, consistent with its national law, to prevent any attack on the person, freedom and dignity of such personnel.
9. Each Party shall facilitate the movement of persons and the transfer of currencies as necessary for implementation of the Agreement.
10. Facilities in the Russian Federation that have been constructed or modified using assistance provided under the Agreement shall be used only for mutually-agreed purposes.
11. A Party, its Executive Agent, or other agents authorized to act on behalf of a Party or its Executive Agent, that awards contracts for the acquisition of articles and services, including construction, research and development, licensing, design, or other activities to implement the Agreement, shall select suppliers or contractors in accordance with the laws and regulations of that Party. Such contracts or other funding instruments to implement the Agreement shall be executed in accordance with the applicable laws and regulations of the Parties.
12. The Executive Agents shall establish and maintain a register of equipment, supplies, materials, services, technology and other assistance subject to the provisions of this Annex.

## **Section II – Liability**

1. Except as specified in paragraph 3 of this Section, the Government of the Russian Federation shall bring no claims or legal proceedings of any kind against the Government of the United States of America, its personnel, its contractors and personnel of those contractors, for any loss or damage of whatsoever nature, including (but not limited to) personal injury, loss of life, or direct, indirect, or consequential damage caused to property of the Government of the Russian Federation, arising out of activities undertaken pursuant to the Agreement. This paragraph shall not apply to the enforcement of the express provisions of a contract.
2. Except as specified in paragraph 3 of this Section, the Government of the Russian

Federation shall provide for the adequate legal defense of and indemnify, and shall bring no claims or legal proceedings against, the Government of the United States of America, its personnel, its contractors and personnel of those contractors, in connection with third party claims, in any court or forum, arising out of activities undertaken pursuant to the Agreement, for nuclear damage occurring within or outside the territory of the Russian Federation as a result of a nuclear incident occurring within the territory of the Russian Federation. For the purposes of this Section, the terms “nuclear damage” and “nuclear incident” shall have the meaning given to such terms in the 1963 Vienna Convention on Civil Liability for Nuclear Damage.

3. In any case when the Government of the Russian Federation believes that the acts or omissions of an employee of the Government of the United States of America or an employee of a contractor of the Government of the United States of America caused and were done with intent to cause personal injury, loss of life, or damage:
  - (a) The Russian Party shall provide written notification to the U.S. Party that identifies the employee and describes the incident, the specific acts or omissions of said employee, and the personal injury, loss of life or damage, and provides an assessment with relevant explanations that the acts or omissions were done with intent to cause personal injury, loss of life, or damage;
  - (b) The Parties shall as appropriate exchange information, and shall at the request of either of them hold prompt consultations and attempt to achieve a mutual understanding within 90 days of the notification;
  - (c) During the period specified in subparagraph (b) of this paragraph, the Government of the Russian Federation shall not be required to provide for the legal defense of or indemnify said employee in connection with this incident; and
  - (d) If a mutual understanding is not reached within 90 days of the notification, paragraphs 1 and 2 of this Section shall not apply to said employee in connection with this incident.
4. The Parties shall hold prompt consultations, as appropriate or upon the request of either of them, on claims or legal proceedings arising out of activities undertaken pursuant to the Agreement.
5. Nothing in this Section shall be construed as:
  - (a) acknowledging the jurisdiction of any court or forum;
  - (b) waiving the sovereign, diplomatic, jurisdictional or any other immunity of either Party with respect to claims or legal proceedings that may arise out of activities undertaken pursuant to the Agreement;
  - (c) prejudicing the privileges and immunities that are enjoyed by any individual engaging

- in activities undertaken pursuant to the Agreement;
- (d) permitting claims or legal proceedings in the courts of any country contrary to the provisions of that country's laws, including provisions required by that country's being a Party to the 1963 Vienna Convention on Civil Liability for Nuclear Damage or to any similar international convention;
  - (e) preventing the Parties from providing compensation in accordance with their national laws; or
  - (f) preventing either Party from bringing claims or legal proceedings against nationals of its country or permanent residents of its country.
6. The provisions of paragraph 1 and the related provisions of paragraph 3 of this Section shall apply *mutatis mutandis* to the Government of the United States of America with respect to claims or legal proceedings of any kind against the Government of the Russian Federation, its personnel, its contractors and personnel of those contractors, arising out of activities in the territory of the United States of America undertaken pursuant to the Agreement.
7. The Parties recognize the similar treatment that is afforded by the indemnification under paragraph 2 of this Section to the Government of the United States of America, its personnel, its contractors and personnel of those contractors in the event of a nuclear incident occurring within the territory of the Russian Federation and by the indemnification that is available in accordance with applicable law to the Government of the Russian Federation, its personnel, its contractors and personnel of those contractors in the event of a nuclear incident occurring within the territory of the United States of America.
8. For the purposes of this Section, the term "contractors" shall mean contractors, subcontractors, consultants, suppliers, or sub-suppliers of equipment, goods or services at any level.

### **Section III -- Taxation of Assistance**

1. The Government of the United States of America, its personnel, contractors and contractors' personnel shall not be liable to pay any tax or similar charge by the Russian Federation or any of its instrumentalities on activities undertaken in accordance with this Agreement. The provisions of this paragraph shall not exempt any contractor's personnel who are nationals of or permanently resident in the Russian Federation, and are present in the Russian Federation in connection with such activities, from income, social security, or any other taxes imposed by the Russian Federation, or by any instrumentalities thereof, regarding income received in connection with the implementation of programs of assistance provided by the Government of the United States of America.

2. The Government of the United States of America, its personnel, contractors, and contractors' personnel may import into, and export out of, the Russian Federation any equipment, supplies, materials or services required to implement this Agreement. Such importation and exportation shall be exempt from any license fees, restrictions, customs duties, taxes or any other charges by the Russian Federation or any of its instrumentalities, but not from the procedures called for by the export control system.

#### **Section IV -- Audits and Examinations**

1. Upon request, representatives of the Government of the United States of America shall have the right to examine the use of any equipment, supplies, materials, training or other services provided under the Agreement, if possible at sites of their location or use, and shall have the right to inspect any and all related records or documentation during the period of the Agreement and for three (3) years thereafter.
2. Appropriate arrangements in support of the conducting of audits and examinations shall be developed by the Executive Agents. The right to conduct the audits and examinations set forth in paragraph 1 of this Section shall not be contingent upon the development of these arrangements.

#### **Section V -- Equipment Certification**

1. The Executive Agent or designated agent of the Government of the Russian Federation shall examine all equipment, supplies, and other materials in each shipment received pursuant to this Agreement and within ten (10) days of receipt shall provide written confirmation to the Executive Agent of the Government of the United States of America, its designated agent or contractor of acceptance or rejection based on whether the equipment, supplies, or other materials conform to specifications mutually coordinated in advance for said equipment, supplies or other materials. Upon request, one or more representatives of the Government of the United States of America or its designated agent may be present at the examination of the equipment, supplies, materials, or other assistance being delivered. Basic certification procedures shall be agreed in writing by the Executive Agents.

#### **Attachment to Annex on Assistance**

1. Provision of assistance pursuant to paragraph 1 of Article IX of the Agreement shall be in accordance with the chart below and payment schedules and milestones for each specific activity as agreed in writing by the Executive Agents.

<u>Types of Activities</u>	<u>Time Frame</u>	<u>Funding Level</u>
<u>Development and Construction Activities</u>		
Activities associated with the development, construction, and modification of facilities for fabricating MOX fuel and long-term storage of spent plutonium fuel; BN-800 core design; BN-600 radial blanket removal and transition to a BN-600 hybrid core; and development of a system for monitoring and inspections, IAEA verification as appropriate, and installation of necessary equipment.	Beginning as early as 2010 and continuing thereafter	Up to \$300 million U.S.
<u>Disposition</u>		
Confirmation of disposition of conversion product	From the date of the first such confirmation and during the entire disposition period	Not less than \$100 million U.S. to be based on a fixed rate per metric ton of conversion product disposed

2. Provision of assistance under paragraph 2 of Article V of the Agreement shall be in accordance with payment schedules and milestones for each specific activity as agreed in writing by the Executive Agents.

**ANNEX  
ON  
INTELLECTUAL PROPERTY**

This Annex to the Agreement between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation, hereinafter referred to as the Agreement, sets forth the procedures governing the protection and allocation of rights to intellectual property transferred or created under the Agreement.

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Agreement. The Parties agree to notify one another in a timely fashion of all intellectual property created and results of scientific and technical work obtained under this Agreement and to seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated in keeping with the provisions of this Annex.

**Section I -- Definitions**

1. The term “intellectual property” shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, which was signed in Stockholm on July 14, 1967.
2. The term “participants” shall mean natural persons or legal entities participating in joint activities within the framework of implementation of the Agreement.
3. The term “background intellectual property” shall mean intellectual property created outside the Agreement and belonging to the participants, the use of which is necessary for the implementation of activities under the Agreement.

**Section II -- Scope**

1. This Annex is applicable to all cooperative activities undertaken pursuant to the Agreement, except as otherwise agreed by the Parties or their Executive Agents.
2. This Annex addresses the allocation of intellectual property rights and takes into consideration the interests of the Parties.
3. Each Party shall ensure that the other Party can obtain the rights to intellectual property allocated in accordance with this Annex. If necessary, each Party shall obtain those rights from its own participants through contracts, license agreements or other legal documents. This Annex does not in any other way alter or prejudice the allocation of rights between a Party and its participants.

4. Disputes concerning intellectual property arising under the Agreement shall be resolved through discussions between the participants, or, if necessary, the Parties or their Executive Agents, which may for these purposes utilize the Joint Consultative Commission. Upon mutual agreement of the Parties or participants, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the Agreement and the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of UNCITRAL shall govern.

### **Section III -- Allocation of Rights**

1. Each Party, its Executive Agent or other authorized representative designated by a Party shall be entitled to a nonexclusive, irrevocable, royalty-free license for non-commercial purposes in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, papers, reports, and books directly resulting from cooperation under this Agreement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly expresses the desire to remain anonymous.
2. Rights to all forms of intellectual property created under the Agreement, other than those rights set forth in paragraph 1 of this Section, shall be allocated as follows:
  - a) For intellectual property created during joint research, for example, if the Parties or their participants have agreed in advance on the scope of work, each Party, its Executive Agent or other authorized representative designated by a Party shall be entitled to all rights and interests in its own country. Rights and interests in third countries shall be determined in implementing agreements, taking into consideration the following factors, as appropriate:
    - 1) the nature of the cooperation,
    - 2) the contributions of each of the Parties and its participants to the work to be performed, including background intellectual property,
    - 3) the intentions, capabilities, and obligations of each of the Parties and its participants to provide legal protection of intellectual property created, and
    - 4) the manner in which the Parties and their participants will provide for the commercialization of intellectual property created, including, where appropriate and possible, joint participation in commercialization.

In addition, each person named as an inventor or author shall be entitled to receive rewards in accordance with the policies of each Party's participating institution.

- b) Visiting researchers not involved in joint research, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under

arrangements with their host institutions. In addition, each such visiting researcher shall be entitled to receive rewards in accordance with the policies of the host institution.

- c) In the event either Party believes that a particular joint research project under the Agreement will lead, or has led, to the creation or furnishing of intellectual property of a type that is not protected by the applicable laws of the United States of America or the Russian Federation, the Parties shall immediately hold consultations to determine the allocation of the rights to the said intellectual property. Such joint activities shall be suspended during the consultations unless otherwise agreed to by the Parties. If no agreement can be reached within a three-month period from the date of the request for consultations, the Parties shall cease the cooperation under the project in question.
3. Rights to background intellectual property may be transferred by the Parties and their participants through license agreements between individuals and/or legal entities. Such license agreements may reflect the following:
- a) definitions,
  - b) identification of intellectual property being licensed and the scope of the license,
  - c) royalty rates and other compensation,
  - d) requirements for protection of business-confidential information,
  - e) requirements to comply with the relevant intellectual property and export control laws of the United States of America and the Russian Federation,
  - f) procedures for record keeping and reporting,
  - g) procedures for dispute resolution and termination of each agreement, and
  - h) other appropriate terms and conditions.

#### **Section IV -- Business-Confidential Information**

In the event that information identified in a timely fashion as business-confidential is furnished or created under the Agreement, each Party and its participants shall protect such information in accordance with applicable laws, regulations, and administrative practices. Information may be identified as “business-confidential” if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, if the information is not generally known or publicly available from other sources, and if the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential. Neither Party nor its participants shall publish or transfer to third parties business-confidential information furnished or created under the Agreement without the prior written consent of the other Party or its participants.

**JOINT STATEMENT  
CONCERNING NON-SEPARATION OF WEAPON-GRADE PLUTONIUM  
IN CONNECTION WITH  
THE AGREEMENT BETWEEN  
THE GOVERNMENT OF THE UNITED STATES OF AMERICA  
AND  
THE GOVERNMENT OF THE RUSSIAN FEDERATION  
CONCERNING THE MANAGEMENT AND DISPOSITION OF PLUTONIUM  
DESIGNATED AS NO LONGER REQUIRED FOR DEFENSE PURPOSES AND  
RELATED COOPERATION<sup>2</sup>**

The Government of the United States of America and the Government of the Russian Federation, hereinafter referred to as the Parties, have already taken significant steps toward ending the production of fissile material for use in nuclear weapons. These steps include the signing of the Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning Cooperation Regarding Plutonium Production Reactors (PPRA) of September 23, 1997, concerning the cessation of the generation of weapon-grade plutonium at United States and Russian plutonium production reactors.

One of the key objectives of the Agreement Between the Government of the United States of America and the Government of the Russian Federation Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation, hereinafter referred to as the Agreement, is to reduce irreversibly stockpiles of weapon-grade plutonium from each side's nuclear weapons programs. Both Parties recognize that this disposition will require significant resources. Both Parties also recognize that it would make little sense for either side to commit significant financial and other resources to dispose of such plutonium if either side were planning to continue to separate and accumulate new weapon-grade plutonium.

In this light:

- The Parties reaffirm their intentions not to produce any new weapon-grade plutonium, including by reprocessing of spent fuel or by any other technological process, for nuclear weapons or other nuclear explosive devices or for any military purposes.
- The Government of the United States of America also reaffirms its intention not to separate any new weapon-grade plutonium by any means for any other purposes.
- The Government of the Russian Federation also reaffirms its intention not to build up any stockpile of newly separated weapon-grade plutonium for civil purposes and not to produce any newly separated weapon-grade plutonium unless and until justified for civil power production purposes. In the event that spent fuel containing weapon-grade plutonium were to

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<sup>2</sup> Note: This Joint Statement accompanied the 2000 PMDA and was referenced in the preamble of the 2010 amendment Protocol in the following manner: "Taking into account the Joint Statement Concerning Non-Separation of Weapon-Grade Plutonium adopted in connection with the signing of the Agreement and respective intentions contained therein;"

be reprocessed in the future, the Government of the Russian Federation will take all necessary measures to ensure that any such reprocessing and its products are as proliferation-resistant as possible. The Government of the Russian Federation also confirms its intention to ensure that separation of any plutonium through reprocessing or other technological processes will be keyed to the demand in the civil sector, so as to ensure no unnecessary build up of any civil plutonium stockpiles.

- The Parties note that, during the duration of the Agreement, the BN-600 blanket will be removed in stages to achieve its maximum reduction as quickly as possible, consistent with safety considerations, and that all fuel used in that reactor will not be reprocessed during the duration of the Agreement. After termination of the Agreement, any reprocessing of BN-600 spent fuel containing weapon-grade plutonium resulting from irradiation during the duration of the Agreement will be subject to international monitoring under agreed procedures.
- The Parties note their intention to intensify consultations concerning possible cooperation outside the Agreement on immobilization technologies, including immobilization of waste products containing weapon-grade plutonium, to develop alternatives to separation of such plutonium in the Russian Federation.
- The Parties affirm that, if any of these intentions should change in the future, the Parties will consult in advance of such change, for the purpose of reaching new understandings and agreeing on appropriate measures.

The Parties understand the term "reprocessing" to have its internationally agreed definition, that is, the "separation of irradiated nuclear material and fission products," and note that cleaning up existing separated weapon-grade plutonium to remove Am-241, minor alloying elements, or other impurities, does not constitute reprocessing or new production.

The Parties also note that this Joint Statement of intentions does not:

- (1) affect the ongoing separation activities related to weapon-grade plutonium for small-scale research and development or clean-up efforts, or efforts to address urgent environmental or safety hazards, involving small numbers of kilograms; or
- (2) alter or affect ongoing separation activities related to weapon-grade plutonium generated by the three plutonium production reactors still operating at Seversk and Zheleznogorsk prior to their being converted under the PPRA, provided that all such plutonium is subject to monitoring in accordance with that agreement.

FOR THE GOVERNMENT OF THE  
UNITED STATES OF AMERICA:

/s/

September 1, 2000

FOR THE GOVERNMENT OF THE  
RUSSIAN FEDERATION:

/s/

August 29, 2000