

# Agreement Between the Government Of The United States Of America And The Government Of The Russian Federation Concerning Cooperation Regarding Plutonium Production Reactors

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

Expressing their desire to cooperate with each other to elaborate measures designed to prevent the accumulation of excessive stocks of plutonium and to reduce them in the future;

Taking into account the intent of the Government of the Russian Federation to take out of operation three presently operating reactors that produce plutonium and that provide heat and electricity to regions where they are located, and to create alternative sources of heat and electricity;

Taking into account the shutdown by the United States of America of all of its plutonium production reactors as of 1989;

Have agreed as follows:

## **Article I**

1. All reactors listed in Annex I to this Agreement, which is an integral part of this Agreement, have ceased operations. These reactors shall not resume operation.
2. All reactors listed in Annex II to this Agreement, which is an integral part of this Agreement, shall cease by December 31, 2000, their production of non-reactor-grade plutonium by undergoing modification. After the completion of modifications, these reactors shall permanently cease operation at the end of their normal lifetime, consistent with prudent safety considerations.

## **Article II**

1. The U.S. Party shall provide, subject to the availability of appropriated funds for this purpose, and subject to 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 Modification of the Operating Seversk (Tomsk Region) and Zhelezoogorsk (Krasnoyarsk Region) Plutonium Production Reactors, which will be governed as specified in Article I, paragraph 4, of that agreement and overseen as specified in Article VI of that agreement, step-by-step funding for cooperative implementation of the reactor modifications specified in Article I, paragraph 2, of this Agreement.

2. Provision of funds as described in paragraph 1 of this Article will be based on the achievement of cooperation project milestones to be agreed between the U.S. Party and the Russian Party. In the event that the Russian Party should fail to achieve an agreed cooperation project milestone or the U.S. Party should fail to provide an agreed level of assistance, including funding, to support an agreed cooperation project milestone, either Party may request consultations to determine how best to achieve the objectives of this Agreement under those circumstances. These consultations shall begin within 30 days of such a request. If after 180 days from the beginning of consultations, the Parties do not reach agreement, each Party shall have the right to suspend, until such agreement is achieved, implementation of this Agreement by sending the other Party, through diplomatic channels, appropriate written notification. The consultations specified in this paragraph shall continue until agreement is reached or, if this is not possible, until the termination

of this Agreement, using the procedures provided for in Article XI, paragraph 4, of this Agreement.

### **Article III**

For the purposes of this Agreement, the cessation of plutonium production specified in Article I, paragraph 2, will require the cessation of production by the reactors listed in Annex II to this Agreement of spent fuel containing plutonium whose combined Pu-240 plus Pu-238 isotopic concentration is less than 20 percent of total Pu, averaged over the total fuel discharged in any one batch. Once each reactor listed in Annex II to this Agreement is modified, it will utilize an alternative type of fuel including uranium derived from dismantled nuclear weapons.

### **Article IV**

The plutonium produced after entry into force of this Agreement in the reactors identified in Annex II to this Agreement, and any high-enriched uranium recovered from spent fuel discharged from the modified reactors, shall not be used in nuclear weapons.

### **Article V**

Procedures necessary to assure compliance with the obligations provided for in Articles I, III, and IV of this Agreement are contained in Annex III, which is an integral part of this Agreement.

### **Article VI**

1. In order to prevent access to it by people and organizations not participating in the implementation of this Agreement, information transmitted under this Agreement may be considered as sensitive by the Parties. Such information must be clearly designated and marked. The Party transmitting the information shall designate information as sensitive in accordance with its internal laws and regulations. The Party receiving the information shall handle this information as sensitive.
2. Sensitive information shall be handled in accordance with the laws and regulations of the Party receiving the information, and this information shall not be disclosed or transmitted to a third Party not participating in implementation of this Agreement without the clearly expressed consent of the Party transmitting the information. According to the regulations of the United States, such information shall be treated as foreign government information provided in confidence and shall be protected appropriately. According to the regulations of the Russian Federation, such information shall be treated as official information with limited distribution and shall be protected appropriately.
3. The Parties shall assure effective protection of and allocation of rights to intellectual property transmitted or created under this Agreement, as set forth in this Article and in Annex IV to this Agreement, which forms an integral part of this Agreement.
4. Information transmitted under this Agreement must be used solely for the purposes established by this Agreement in accordance with the laws, regulations, and mutual interests of the States represented by the Parties.
5. The number of people having access to sensitive information must be limited to the number necessary to implement this Agreement and other programs associated with this Agreement.

## **Article VII**

In order to ensure the possibility of taking the reactors listed in Annex II to this Agreement out of operation, the Russian Party shall undertake to create alternative sources of thermal and electrical energy to replace these reactors by the time of their final shutdown. To assist this effort, the U.S. Party will encourage private sector participation in the creation of replacement sources of energy. The U.S. Party does not guarantee the participation of the private sector in these activities, and its degree of success in this effort shall not alter in any way the obligations undertaken by the Parties in this Agreement.

## **Article VIII**

The Parties shall designate Executive Agents to implement this Agreement and its Annexes and Subsidiary Arrangements as follows: for the U.S. Party, the Executive Agents shall be the Department of Defense for implementation of Article II and the Department of Energy for the implementation of the remainder of the Agreement and its Annexes and Subsidiary Arrangements; for the Russian Party, the Executive Agent shall be the Ministry of the Russian Federation for Atomic Energy. After consultation with the other Party, either Party shall have the right to change its Executive Agent upon 30 days' written notice to the other Party.

## **Article IX**

To ensure achievement of the objectives and implementation of this Agreement, the Parties hereby establish a Joint Implementation and Compliance Commission (JICC), which shall convene no later than 21 days following the request of either Party, unless otherwise agreed. The tasks of the JICC shall include the following:

- To review implementation of this Agreement, to include resolution, by mutual agreement, of any implementation issues;
- To consider questions concerning implementation and effectiveness of monitoring procedures;
- To resolve any disputes that may arise regarding compliance with the provisions of this Agreement or its Annexes or Subsidiary Arrangements; and
- To discuss and, if necessary, prepare recommendations concerning any amendments to this Agreement or its Annexes or Subsidiary Arrangements, as well as proposals for resolving any disputes that cannot be resolved in the JICC.

## **Article X**

In the event of conflict between the provisions of this Agreement and any Annexes or Subsidiary Arrangements to this Agreement, the provisions of this Agreement shall prevail.

## **Article XI**

1. This Agreement shall enter into force upon signature on the same date as the implementing agreement specified in Article II, paragraph 1, of this Agreement.
2. This Agreement may be amended by agreement between the Parties. Any such amendment shall enter into force upon signature.
3. Each of the Subsidiary Arrangements shall be considered to be an integral part of their respective Annex to this Agreement under the condition, however, that they can be changed and

added to by agreement between the sides represented by their Executive Agents as they are described according to Article VIII of this Agreement.

4. This Agreement may be terminated by either Party by sending written notice through diplomatic channels of its intent to terminate this Agreement, in which case this Agreement terminateS after one year from the date of sending this notification. Termination of this Agreement shall not affect the following:

- The provisions of Article VI shall continue in effect; and
- The obligations provided for in Article IV of this Agreement, and the associated compliance procedures, shall continue in effect with respect to plutonium produced at the reactors listed in Annex II to this Agreement between entry into force of this Agreement and the date of its termination. The procedures specified in Annex III of this Agreement cease to be applicable to this plutonium when the plutonium is being used for needs that are not inconsistent with the objectives of this Agreement, as detailed in Annex III.

DONE at Moscow, in duplicate, this twenty-third day of September, 1997, in the English and Russian languages, both texts being equally authentic.

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**Annex I 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**

Lists of Shutdown Plutonium Production Reactors

In The Russian Federation

1. Ozersk
  - A Reactor
  - IR-AI Reactor
  - AV-1 Reactor
  - AV-2 Reactor
  - AV-3 Reactor
2. Zheleznogorsk
  - AD Reactor
  - ADE-1 Reactor
3. Seversk
  - I-1 Reactor
  - I-2 Reactor
  - ADE-3 Reactor

In The United States of America

1. Hanford
  - B, C, D, DR, F, H, KE, KW, and N Reactors
2. Savannah River
  - K, L, P, R, and C Reactors

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**Annex II 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**

Lists of currently Operating Plutonium Production Reactors

### In The Russian Federation

1. Zheleznogorsk
  - ADE-2 Reactor
2. Seversk
  - ADE-4 Reactor
  - ADE-S Reactor

### In The United States of America

None

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## **Annex III Concerning Compliance Procedures 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**

### Article I

#### Purpose and Scope

In order to achieve the objectives of the Agreement, the Parties undertake to permit monitoring, in accordance with the terms of this Annex and its Subsidiary Arrangements of:

- the reactors identified in Annexes I and II to this Agreement, to ensure that once shut down they remain in a non-operating status (Subsidiary Arrangements A-1 and A2);
- an agreed amount of plutonium produced in the reactors identified in Annex II to this Agreement prior to their modification, to ensure such plutonium (hereinafter referred to as "subject plutonium") is not used in nuclear weapons (Subsidiary Arrangement B); and
- the reactors identified in Annex II to this Agreement, to ensure that, once modified as specified in Article I, paragraph 2 of this Agreement (hereinafter referred to as being "modified"), they operate only in the agreed modified mode (Subsidiary Arrangement C).

### Article II

#### General Monitoring Activities and Designation of Monitors

1. Each Party shall have the right to send monitors to the relevant facilities of the other Party where activities subject to the Agreement are being conducted, including reactors listed in Annexes I and II to this Agreement, storage facilities, and other facilities containing subject plutonium of the other Party, as specified in the Subsidiary Arrangements to this Annex. Each Party shall be obligated to accept and facilitate such visits.

2. The monitored Party shall provide monitors with agreed personal protective equipment, which shall remain with the organization in the monitored country responsible for radiation protection of personnel. However, the monitoring Party may use its own agreed personal protection equipment if the monitoring Party so chooses, and such equipment should be appropriately coordinated between the Executive Agents or within the framework of the JICC.

The Administration of the monitored facility shall provide visiting monitors with personal protective equipment and individual dosimeters to be used at the facility. In addition, each monitor shall have the right to use at the monitored facilities two thermoluminescent integrating dosimeters supplied by the monitoring country. Dosimeters furnished by the monitored facility and the monitoring country shall be worn by each monitor while working at the facility and given to the responsible facility person at the end of the working day. Upon completion of each monitor's visit,

the responsible person at the facility shall select one of the two monitor-supplied dosimeters that had been used by each monitor. The selected dosimeter shall be tagged and sealed by both sides and retained at the facility as a confirmation device if questions arise concerning monitor exposure levels. Within 90 days following the monitor's departure from the facility, each side shall have the right to contact the other side for a joint reading of the confirmation dosimeter. The second dosimeter supplied by the monitoring side shall be retained by each monitor when departing from the facility. The monitoring side shall provide to the facility Administration necessary information on the reading and calibration methods of the dosimeters supplied by the monitoring Party. Upon request of monitors, the facility administration shall provide data on the radioactive environment in the working areas.

3. The following procedures shall apply to the designation of monitors:

(a) Each Party shall provide the other Party with an annual list, consisting of no more than 100 monitoring personnel, who may carry out monitoring activities in accordance with this Annex and its subsidiary Arrangements. The initial list shall be provided no later than 60 calendar days after this Annex comes into force and shall be effective for one year, unless otherwise agreed. Subsequent annual lists may be submitted up to 120 calendar days prior to the expiration date of the list currently in effect. Only monitors from these lists can be selected for monitoring activities.

If a Party determines that a monitor is unacceptable who has been included on the initial or annual list of monitoring personnel or on a list of proposed changes submitted under subparagraph 3.b of this Article, the objecting Party shall notify the other Party of the objection no later than 60 calendar days after the submission of the list. Such monitors shall be deemed to have been removed from the list of monitoring personnel unless otherwise agreed.

(b) Each Party shall have the right to add or substitute monitoring personnel by written notification at any time within the numerical limitations of subparagraph 3.a of this Article.

(c) Each list of monitoring personnel shall contain: the full name; day, month and year of birth; city, state or oblast, and country of birth; passport number; gender; and citizenship and place of employment.

(d) No later than 30 calendar days prior to entry into the country, the monitoring Party shall provide to the embassy of the monitored Party the passports and visa applications of the personnel included in the notification.

(e) No more than 15 calendar days following receipt of the passports and visa applications, the embassy of the monitored Party shall return those passports to the monitoring Party with visas and all necessary documents that shall allow, for at least a 12-month period, entry to and exit from the territory of the monitored Party to carry out functions under this Annex.

4. (a) All monitors shall respect the laws of the hosting Party, observe technical safety rules, and internal practices existing at the monitored facilities, as well as refrain from interfering into the internal affairs of the monitored Party or the technical operations of the monitored facilities. All types of monitoring activities on technological and measurement equipment affecting the safety of the monitored facilities shall be conducted by the personnel of the monitored facilities, unless otherwise agreed.

(b) If the monitored Party determines that a monitor on the monitored Party's territory has violated the provisions of its national legislation, this Annex, or its Subsidiary Arrangements, the monitored Party shall notify the other Party. The monitor who is the subject of the determination shall be removed from the list of monitoring personnel, and depart from the monitored country, as soon as possible unless otherwise agreed.

5. (a) The monitored Party has the right to assign its own personnel to facilitate the performance of the monitoring activities or participate in or observe, as appropriate, all monitoring activities performed by the monitors, as well as other activities related to the Subsidiary Arrangements.

(b) Assignment of such personnel by the monitored Party shall not thereby delay or otherwise impede monitorS in the exercise of their functions.

6. Monitors shall enjoy unescorted and unrestricted freedom of movement in areas not requiring special permission for entry by the public, as defined by the laws of the monitored Party. Monitors do not have the right to be present in areas requiring special permission for entry by the public, as defined by the laws of the monitored Party, without appropriate permission from the monitored Party and without escorts of the monitored Party. Escorting shall not take place in the office spaces or the residence of monitoring personnel. If during a monitoring trip, monitoring personnel reside within areas requiring escorts, escorts shall be provided and paid by the monitored Party and shall be available at any time on an emergency basis and, if requested, daily between the hours of 0700 and 2400.

7. Monitors shall have the right to maintain voice, facsimile, and data communication with their embassy and home country at all times by means of the telephone systems of the monitored Party. In addition, monitors shall also have the right to maintain other forms of communication at the cost of the monitoring Party, provided that the monitors obtain the necessary communications permits in accordance with the national communications regulations of the monitored Party.

8. (a) Monitors shall provide the monitored Party, if requested, with a duplicate copy of all data they obtain during a visit to the relevant facilities before departing the facilities. Prior to departing these facilities, monitors shall provide the monitored Party a copy of any conclusions that have been drawn during the visit. For the conclusions, monitors shall use exclusively the information obtained by them in accordance with agreed procedures defined by, or to be developed pursuant to, Annex III and its Subsidiary Arrangements. Subsequently, each Party shall inform the other Party within an agreed period of time of the conclusions it has drawn from the data its monitors have obtained.

(b) Unless otherwise agreed, for example, to preserve data or save costs, video or other electromagnetically recorded information must be kept and stored on-site using agreed procedures, such as under dual U.S. and Russian seals. Procedures for transfer of such types of informatiOn shall be developed within the JICC.

9. The U.S. Party and the Russian Party shall provide at each of their relevant facilities all required conditions and services for facilitating the monitoring activities specified in the Subsidiary Arrangements, including office space, transportation the assistance of facility personnel, escorts, liquid nitrogen (if required), and a reliable electrical supply to ensure the continuous operation of monitoring systems. For the~se services, the monitoring Party shall pay the monitored Party a total of 150 USD per monitor for each day on which monitoring activities are conducted at the relevant facilities.

10. Each Party shall be responsible for its own costs related to monitoring activities it performs, including the cost of travel and lodging associated with monitoring visits and the cost of its own monitoring equipment. If either Party will incur expenses as a result of a specific request, by the other Party, for assistance beyond that required by this Annex and its Subsidiary Arrangements, the Parties shall consult to determine the allocation of these expenses.

The Parties will conduct negotiations concerning the provision of assistance by the United States of America for the purposes of (a) modernization and provision of equipment for Russian storage facilities for plutonium produced in the reactors listed in Annex II to this Agreement, in order to

improve the safety and effectiveness of accountability and control, and (b) provision of appropriate containers for the storage of plutonium that is subject to monitoring. Nothing in this sub-paragraph may be deemed to restrict, delay or extinguish any of the rights or obligations of the Parties under this Agreement and its associated documents.

11. Monitors of each Party shall have the right to request clarifications if ambiguities arise during monitoring activity. If possible, the monitored Party shall provide the monitor, during the inspection, with such clarifications as may be necessary to remove the ambiguities. If either Party believes an ambiguity is not resolved, or if the monitors determine that the cooperation of the monitored Party was inadequate, or if the monitored Party determines that the monitors abused their rights, the Parties shall promptly hold consultations where they shall seek to agree on measures to resolve the ambiguity. Such consultations shall be held, unless otherwise agreed, within the Joint Implementation and Compliance Commission (JICC), as described in Article IX of the Agreement.

### Article III

#### General Provisions and Resolution of Ambiguities

1. The monitoring arrangements provided for in this Annex and its Subsidiary Arrangements shall be implemented in such a manner as to:

(a) be consistent with accepted industry management practices required for the economic and safe conduct of nuclear activities;

(b) take account of technological developments that may be relevant to activities described in the Subsidiary Arrangements, with a view to improving the costeffectiveness of these activities.

2. The Parties shall make all administrative arrangements necessary to carry out their obligations in order to implement the Agreement, this Annex, and its Subsidiary Arrangements, and shall take the necessary steps to ensure that monitors can effectively discharge their functions.

3. Each Party shall facilitate the entry and exit of personnel of the other Party into and out of its territory, and the importation into, and exportation from, its territory of materials and equipment for the purpose of carrying out activities in accordance with the Agreement, this Annex, and its Subsidiary Arrangements. Each Party shall treat with due respect the personnel of the other Party present on its territory in connection with activities in accordance with the Agreement, this Annex, and its Subsidiary Arrangements, and shall take all appropriate steps to prevent any attack on the person, freedom and dignity of such personnel.

### Article IV

#### Administrative Provisions

1. The monitoring Party shall provide to the monitored Party a notification of intent to conduct each monitoring visit at least 60 days prior to each such visit. This notification shall include:

(a) the planned date and estimated time of arrival, the point of entry, and the destination facility;

(b) the names of the monitors, drawn from the list of monitors provided pursuant to Article II, paragraph 3, of this Annex, and the name of the monitoring team leader;

(c) a list of all equipment that will accompany the monitoring team; and

(d) a detailed description of the monitoring activities to be conducted during the visit.

The monitored Party, not later than 15 days after receipt of such notification shall confirm to the requesting Party whether the dates for the visit are acceptable, and if not acceptable, shall at the same time propose alternate dates that are not more than 30 calendar days after the originally requested dates, except in emergency situations, in which case the Parties shall consult within the JICC. In either case, the monitored party shall take all necessary steps required to facilitate the visit, including the issuance of permits required for monitors to carry out their activities.

2. The duration of the regular monitoring visits shall not exceed those durations specified in the Subsidiary Arrangements, but may be extended by agreement of the Parties.

3. On each monitoring visit, monitoring teams may perform monitoring activities in accordance with the relevant Subsidiary Arrangements and with the requirements of paragraph 1 of this Article. Such visits and activities should be coordinated with a view to reducing the costs and time required to accomplish the objectives of the Subsidiary Arrangements.

4. The monitoring Party shall have the right to conduct special visits. Detailed procedures related to the implementation of such visits shall be agreed upon by the JICC within six months of entry into force of the Agreement, unless otherwise agreed by the JICC. These visits shall not be counted against the agreed number of regular monitoring visits, unless otherwise agreed.

5. (a) Monitors shall not engage in any professional or commercial activity other than monitoring activities, including for personal profit, in the territory of the monitored Party. Monitors shall be obligated to respect the laws and regulations of the monitored Party and are also obligated not to interfere in the internal affairs of the monitored Party.

(b) Monitors shall not disclose sensitive information to unauthorized Parties in violation of Article VI of the Agreement. They shall remain bound by this responsibility even after their participation in monitoring visits ceases.

6. The monitored Party shall, for the purpose of eliminating delay, facilitate the passage through customs of baggage, supplies, equipment, or agreed calibration standards, if so required, for use by the monitors. The management of the monitored facility shall assist monitors, if requested, in obtaining travel tickets, making hotel reservations, and arranging for meals and, as needed, emergency medical and dental care. The monitored Party shall provide transportation from the nearest commercial airport to the facilities to be visited at agreed cost to the monitoring Party.

7. Both Parties shall allow monitors to bring into the territory of the monitored Party:

(a) articles for their personal use, with the exception of articles the import or export of which is prohibited by law or controlled by quarantine regulations; and

(b) equipment, supplies, and agreed calibration standards, if so required, intended for use in the conduct of monitoring activities.

8. (a) All monitoring equipment and means of personal protection to be used by the monitoring Party must be certified in accordance with the laws and regulations of the monitored Party, and samples of such equipment, along with their specifications and all technical documentation, must be provided in advance of use to the monitored Party. The monitored Party shall assist in the certification of all equipment necessary to conduct authorized monitoring activities.

(b) Equipment imported into the territory of the monitored Party under this Annex and its Subsidiary Arrangements will be agreed by the Parties to be relevant to monitoring activities. The

monitoring Party, 30 days before using equipment or materials designed for implementing monitoring activities, shall present them to the monitored Party.

(c) If such equipment does not conform to the requirements in sub-paragraphs (a) and (b) above, it may not be used for the monitoring activities, and shall be shipped back to the monitoring Party, if requested.

(d) All imported monitoring equipment shall remain on site, unless otherwise agreed.

9. The shipping within the territory of the monitored Party of equipment, supplies, or agreed calibration standards, if required, containing radioactive materials, shall be conducted by the monitored facility in accordance with national legislation of the monitored Party and International Atomic Energy Agency guidelines and recommendations.

10. Nothing herein affects the rights and obligations of the Parties under other agreements between the two Parties

11. This Annex may be amended by the written agreement of the Parties. Changes to Subsidiary Arrangements shall not constitute amendments to this Annex. This Annex and its Subsidiary Arrangements shall remain in force, in accordance with the provisions of Article XI of the Agreement.

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### **Subsidiary Arrangement A-1 To Annex III: For Shutdown Plutonium Production Reactors In The United States Of America**

#### Article I

This Arrangement concerns the obligation in Article I, paragraph 1, of the Agreement that all reactors listed in Annex I shall not resume operation. This Arrangement applies to shutdown plutonium production reactors in the United States of America, B, C, D, DR, F, H, KE, KW, and N at Hanford and K, L, P, R, and C at Savannah River.

#### Article II

1. Joint Russian-U.S. groups of experts shall visit each of the reactors listed in Article I in order to determine their technological status and send their joint conclusion to the Joint Implementation and Compliance Commission (JICC). This conclusion shall include recommendations on each such reactor concerning monitoring procedures to confirm that these reactors do not resume their operation.

If any of the reactors in Article I have already begun decommissioning by the time of entry-into-force of the Agreement (EIF), then monitoring measures for these reactors may be established at a reduced level if agreed by the JICC. If any of these reactors are agreed by the JICC to be irreversibly dismantled at the time of EIF, then no monitoring measures or further data exchanges would be required for these reactors under the Agreement. If appropriate, the Parties may agree to such reductions in monitoring procedures by exchange of diplomatic notes prior to EIF.

2. The U.S. Party shall report data necessary for monitoring of the plutonium production reactors B, C, D, DR, F, H, KE, KW, and N at Hanford and K, L, P, R, and C at Savannah River and shall allow for monitoring at these reactors as specified below, in order to ensure that these reactors remain in a non-operating status.

3. Russian monitors shall have the right to conduct a monitoring visit to each shutdown reactor once a year. In the first year of monitoring at each reactor, time spent by monitors at that reactor shall be no longer than 5 days, and the total monitoring effort at the reactor shall not be more than 30 person-days. Thereafter, time spent by monitors shall be no longer than 4 days per year at each monitored reactor site (Hanford and Savannah River, respectively) and the total monitoring effort at each site shall not be more than 16 person-days.

4. In the event that the U.S. Party decides to further decommission or dismantle a reactor facility being monitored under this Subsidiary Arrangement, it shall notify the Russian Party and the Parties shall develop agreed procedures to assure that the activity does not return the reactor facility to operational status. If the Parties agree that the dismantling is irreversible, the reactor shall no longer be subject to monitoring under this Agreement.

### Article III

1. Within 30 days of entry-into-force of the Agreement the U.S. Party shall provide for each of the reactors listed in Article II:

(a) Information on the status of the reactor core, the cooling ponds, and the provisions for externally supplied electrical power;

(b) design information on systems, utilities, and access areas necessary for the operation of each reactor, in the amount necessary for monitoring, as agreed upon by both Parties.

2. The Russian Party shall have the right to verify at each of the reactor sites information provided in accordance with paragraph 1 of this Article by the U.S. Party.

### Article IV

1. Using agreed procedures, personnel of the monitored facilities, upon request by and under supervision of Russian monitors, shall install at agreed locations seals or any other agreed monitoring equipment on systems and equipment and agreed access areas that would be necessary for the operation of the reactor, in a manner that will assure the infeasibility of putting the reactor into operation without breaking seals or being detected by the other monitoring equipment. These seals or other monitoring equipment shall not prevent personnel at the reactors from conducting necessary maintenance or technological work.

2. Except in emergency conditions, Russian monitors shall have the right to be present whenever seals applied under this Article are broken or other monitoring equipment is prevented from performing its intended function. In the event that a seal is broken or other monitoring equipment is prevented from performing its intended function when Russian monitors are not present, the U.S. Party shall promptly notify the Russian Party and allow within 30 days after the event, the opportunity to conduct a special monitoring visit to the particular reactor and reinstall seals or other monitoring equipment using agreed procedures.

### Article V

Specific monitoring equipment for this Subsidiary Arrangement and detailed procedures for operating this equipment will be agreed by the JICC.

## Article I

This Arrangement concerns the obligation in Article I, paragraph 1, of the Agreement that all reactors listed in Annex I shall not resume operation. This Arrangement applies to shutdown plutonium production reactors in the Russian Federation, A, JR-AI, AV-1, AV-2, and AV-3 at Ozersk, AD and ADE-1 at Zheleznogorsk, and I-1, I-2, and ADE-3 at Seversk. This Arrangement shall also apply to the ADE-2 reactor at Zheleznogorsk and the ADE-4 and ADE-5 reactors at Seversk when these reactors permanently cease operations.

## Article II

1. Joint U.S.-Russian groups of experts shall visit each of the reactors listed in Article I in order to determine their technological status and send their joint conclusion to the Joint Implementation and Compliance Commission (JICC). This conclusion shall include recommendations on each such reactor concerning monitoring procedures to confirm that these reactors do not resume their operation.

If any of the reactors in Article I have already begun decommissioning by the time of entry-into-force of the Agreement (EIF), then monitoring measures for these reactors may be established at a reduced level if agreed by the JICC. If any of these reactors are agreed by the JICC to be irreversibly dismantled at the time of EIF, then no monitoring measures or further data exchanges would be required for these reactors under the Agreement. If appropriate, the Parties may agree to such reductions in monitoring procedures by exchange of diplomatic notes prior to EIF.

2. The Russian Party shall report data necessary for monitoring of the plutonium production reactors A, JR-AI, AV-1, AV-2, and AV-3 at Ozersk, AD and ADE-1 at Zheleznogorsk, and I-1, I-2, and ADE-3 at Seversk and shall allow for monitoring at these reactors as specified below, in order to ensure that these reactors remain in a non-operating status.

3. U.S. monitors shall have the right to conduct a monitoring visit to each shutdown reactor once a year. In the first year of monitoring at each reactor, time spent by monitors at that reactor shall be no longer than 5 days, and the total monitoring effort at the reactor shall not be more than 30 person-days. Thereafter, time spent by monitors shall be no longer than 4 days per year at each monitored reactor site (Ozersk, Zheleznogorsk, and Seversk, respectively), and the total monitoring effort at each site shall not be more than 16 person-days.

4. In the event that the Russian Party decides to further decommission or dismantle a reactor facility being monitored under this subsidiary Arrangement, it shall notify the U.S. Party, and the Parties shall develop agreed procedures to assure that the activity does not return the reactor facility to operational status. If the Parties agree that the dismantling is irreversible, the reactor shall no longer be subject to monitoring under this Agreement.

## Article III

1. Within 30 days of entry-into-force of the Agreement the Russian Party shall provide for each of the reactors listed in Article II:

(a) information on the status of the reactor core, the cooling ponds, and the provisions for externally supplied electrical power;

(b) design information on systems, utilities, and access areas necessary for the operation of each reactor, in the amount necessary for monitoring, as agreed upon by both Parties.

2. The U.S. Party shall have the right to verify at each of the reactor sites information provided in accordance with paragraph 1 of this Article by the Russian Party.

#### Article IV

1. Using agreed procedures, personnel of the monitored facilities, upon request by and under supervision of U.S. monitors, shall install at agreed locations seals or any other agreed monitoring equipment on systems and equipment and agreed access areas that would be necessary for the operation of the reactor, in a manner that will assure the infeasibility of putting the reactor into operation without breaking seals or being detected by the other monitoring equipment. These seals or other monitoring equipment shall not prevent personnel at the reactors from conducting necessary maintenance or technological work.

2. Except in emergency conditions, U.S. monitors shall have the right to be present whenever seals applied under this Article are broken or other monitoring equipment is prevented from performing its intended function. In the event that a seal is broken or other monitoring equipment is prevented from performing its intended function when U.S. monitors are not present, the Russian Party shall promptly notify the U.S. Party and allow within 30 days after the event, the opportunity to conduct a special monitoring visit to the particular reactor and reinstall seals or other monitoring equipment using agreed procedures.

#### Article V

Specific monitoring equipment for this Subsidiary Arrangement and detailed procedures for operating this equipment will be agreed by the JICC.

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### **Subsidiary Arrangement B To Annex III: For Storage Facilities In The Russian Federation Containing Plutonium Produced By The Operating Plutonium Production Reactors**

#### Article I

This Arrangement concerns the obligation in Article IV of the Agreement that plutonium produced after entry into force of the Agreement in the reactors identified in Annex II shall not be used in nuclear weapons. This Arrangement applies to the plutonium storage facility at Seversk and the plutonium storage facility at Zheleznogorsk and any other storage locations where subject plutonium is located.

#### Article II

1. (a) Within 30 days after entry into force of the Agreement, or as soon as any batch of material has been separated, whichever is later, the Russian Party shall place into storage at Seversk, Zheleznogorsk, or both, or any other storage location, and make available for monitoring under this Arrangement, all plutonium separated after January 1, 1997, from spent fuel produced by the reactors in Annex II after January 1, 1995. The Russian Party shall identify these storage facilities and declare, within 30 days after entry into force of the Agreement, and every six months thereafter, the mass of subject plutonium stored in each, as well as the date(s) that this material was separated.

(b) Subject plutonium shall be in the form of plutonium oxide, whose ratio of Pu-240 to total Pu, and of Am-241 to Pu-241, as determined by agreed methods, shall not exceed agreed thresholds, i.e., it is to correspond to plutonium that comes from low-burnup fuel and has been newly produced, hereinafter referred to as "monitored plutonium".

(c) At the end of each 6-month period referred to in subparagraph (a), the Russian Party shall submit for monitoring at Seversk or at Zheleznogorsk, or both, or any other storage location, and make declarations as in subparagraph (a) on, all newly produced and separated plutonium from each of these reactors. This additional subject plutonium shall meet these same specifications.

(d) Monitoring of the ratios of Pu-240 to total Pu, and of Am-241 to Pu-241, or of any other agreed isotopic ratios, shall be based on a determination of whether these meet agreed threshold values. The acceptability of this type of measurement to determine the presence of monitored plutonium is limited to this Annex and this Agreement and shall not prejudice any other current or future agreements.

(e) For each reactor in Annex II, the 6-month submissions and declarations described in subparagraphs (a) and (c) above shall continue at least until core modification is complete and the reactor is restarted with the new type of core. However, if spent fuel produced by any such reactor, before it is modified, has not yet been reprocessed at that time, the 6-month submissions shall continue until all such spent fuel from that reactor has been reprocessed and its plutonium has been placed under monitoring in the storage facility. The cumulative total amount of such plutonium, as estimated, will be between 405 and 9 metric tons when it has all been reprocessed.

2. The Russian Party shall report data and allow monitoring of subject plutonium stored at the plutonium storage facilities at Seversk or Zheleznogorsk, or both, or any other storage location subject to the Agreement, as specified in Article I of this Subsidiary Arrangement, using agreed procedures, in order to provide assurance that:

(a) the amount of plutonium within storage containers submitted for monitoring is as declared;

(b) the plutonium is monitored plutonium, as defined by Article II, paragraph I(b) of this Subsidiary Arrangement; and

(c) the containers storing plutonium remain in the storage locations as declared.

### Article III

1. Within 30 days of entry into force of the Agreement, the Russian Party shall provide detailed design information on all plutonium storage facilities specified in Article

This design information shall include:

- physical layout of the storage facility(s);
- arrangement of containers within the facility(s);
- a description of the plutonium storage containers, including dimensions;
- plutonium-storage-container maintenance and access requirements; and
- any other agreed information.

2. The information in paragraph 1 shall be updated as appropriate.

3. U.S. monitors shall have the right to conduct monitoring visits twice per year to each plutonium storage facility listed in Article I. During these periodic monitoring visits, the Russian Party shall declare information on the contents of the plutonium containers that contain subject plutonium at storage facilities listed in Article I. For each container in which plutonium is stored, these declarations shall include:

- container identification;

- mass of plutonium;
- location of the container;
- date on which the plutonium oxide was produced; and
- serial numbers and integrity of the seals applied.

4. U.S. monitors shall have the right to confirm the declarations made under this Article at each periodic monitoring visit by reviewing surveillance records, and by assessing randomly selected containers storing plutonium by agreed non-destructive measurement methods referred to in paragraph 5 of this Article, and by examination of seals. U.S. monitors shall be given access to the storage facility for the purpose of selecting this random sample. The selected containers storing plutonium shall be transported to an appropriate location and made available for examination-and measurement.

5. (a) U.S. and Russian technical experts shall agree, as soon as possible, on methods and technology, and appropriate procedures of measurements, including appropriate use of calibration standards, based on a "yes/no" principle, in order to:

(i) determine the value of the ratio of Pu-240 mass to total Pu mass, compared to an agreed upon threshold, and the value of the ratio of Am-241 to Pu-241, compared to an agreed upon threshold, or any other agreed methods, which shall confirm that the subject plutonium in storage facilities referred to in Article I is monitored plutonium, as defined by Article II, paragraph I(b) of this Subsidiary Arrangement; and

(ii) to confirm that the mass of plutonium in a closed container is as declared.

None of these methods, alone or in combination, shall reveal sensitive information to the monitoring Party.

(b) If so agreed, the Russian Party shall provide agreed calibration standards and any other agreed necessary materials on agreed terms.

6. The Russian Party shall provide a suitable area for the conduct of measurements at each plutonium storage facility. This area shall have stable and reliable electrical power. The Russian Party shall supply liquid nitrogen in the amounts necessary for operations.

7. U.S. monitoring teams under this Subsidiary Arrangement shall consist of up to 10 individuals. In the first year of monitoring at each storage facility, each monitoring visit shall last up to 10 days. Thereafter, each monitoring visit shall last up to 6 days.

#### Article IV

Containers holding subject plutonium shall be marked by the monitored Party with U.S.-supplied identifying tags and tamper-indicating seals. U.S. monitors shall be allowed to observe the application of these tags and seals. The Russian Party shall notify the U.S. Party if any of these seals or other monitoring equipment subsequently is broken or non-functioning. Using agreed procedures, the Russian Party shall install under observation by U.S. monitors U.S.-supplied monitoring equipment in agreed locations. U.S. monitors shall be granted access as necessary to observe the maintenance on this equipment and to observe the removal or replacement of the film (or other recording media), for processing the results of the monitoring activity on-site, or storing the collected information using agreed procedures on-site.

#### Article V

1. The following additional procedures will apply for any subject plutonium that the Russian Party chooses to remove from its original or subsequent storage facility for transformation into mixed uranium-plutonium oxide fuel (MOX) for declared peaceful use in reactors.
2. For any plutonium meeting the conditions in paragraph of this Article, U.S. monitors shall have the right to verify upon arrival at the fuel fabrication facility (the "MOX plant") the unique identifiers and/or seals previously applied by the U.S. Party to the plutonium storage containers while the material was in storage facilities.
3. Under this Arrangement, U.S. monitoring rights for this plutonium shall cease once U.S. monitors have confirmed receipt of this material at the MOX fabrication facility, as described in paragraph 2. Beyond this, the plutonium would be subject to international verification measures in place at the MOX facility under any other applicable agreements.

#### Article VI

Specific monitoring equipment for this Subsidiary Arrangement and detailed procedures for operating this equipment will be agreed by the JICC.

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### **Subsidiary Arrangement C To Annex III: For The Supply Of Fresh Fuel, For Fresh Fuel Charging, And For Spent Fuel Discharging And Spent Fuel Storage Areas Related To The Modified Reactors In The Russian Federation**

#### Article I

1. This Arrangement concerns the following obligations: in Article I, paragraph 2, of the Agreement, that all reactors listed in Annex II shall cease by December 31, 2000, their production of non-reactor-grade plutonium by undergoing modification; in Article III of the Agreement that this modification will require the cessation of production by the reactors listed in Annex II of spent fuel containing plutonium whose combined Pu-240 plus Pu-238 isotopic concentration is less than 20 percent of total Pu, averaged over the total fuel discharged in any one batch; in Article III that once each such reactor is modified, it will utilize an alternative type of fuel including uranium derived from dismantled nuclear weapons; and in Article IV that the plutonium produced after entry into force of the Agreement in the reactors identified in Annex II, and any high-enriched uranium recovered from spent fuel discharged from the modified reactors, shall not be used in nuclear weapons. Measurements and monitoring activities described below are designed to enhance confidence in the above-mentioned obligations.

2. This Arrangement applies to fresh fuel charging, and to spent-fuel discharge and spent-fuel storage areas of the reactors ADE-2 at Zheleznogorsk and ADE-4 and ADE-5 at Seversk (the "reactors"). It will continue to apply to fresh fuel charging and to each spent fuel discharge area until the reactor is permanently shut down, and to each spent-fuel storage area as long as the Agreement is in force.

#### Article II

1. The Russian Party shall report data and allow for monitoring, as specified below, for fuel loaded into and discharged from each of the reactors to ensure that such fuel and operations are consistent with the terms of the Agreement.

2. U.S. monitors shall have the right to be present and observe the installation of monitoring equipment, as specified below, at each discharge area or other appropriate area, to confirm that fuel is not discharged early.

3. U.S. monitors shall have the right to conduct monitoring at each of these reactors, as specified below, to confirm the composition of fuel to be loaded into the reactors, and to have visual access, after the reactor is modified, to the spent fuel discharged in the spent fuel pools.

### Article III

1. At least 6 months prior to the first possible core loading of enriched fuel (fuel containing enriched uranium) into each reactor, the U.S. Party shall have the right to begin the installation, using agreed procedures at agreed locations, of a sensor or monitoring system and a data recorder. This equipment shall monitor the spent fuel discharge or other similarly appropriate area. The Parties shall take appropriate steps to facilitate the inclusion of this equipment into the design of the modified reactor. This equipment shall be installed so as to be ready to operate reliably in its intended mode at least 10 days prior to the start of operation of each modified reactor.

2. Beginning at least 10 days prior to the first core loading of enriched fuel in each reactor, the Russian Party shall provide reliable electrical supply to support the startup and continuous operation of these monitoring systems.

3. U.S. monitors shall be granted access at the time of monitoring-equipment startup and periodically thereafter, as specified below, to maintain this equipment and to analyze the data it has recorded, using agreed procedures.

4. Except in emergency situations, the Russian Party shall do nothing to interfere with the continuous operation or the intended monitoring function of these systems. In the event that the Russian Party becomes aware, by agreed means based on external indications, of an interruption in operation of the monitoring equipment, it shall notify the U.S. Party without delay of the time and, if known, the cause of the interruption, and allow up to 3 U.S. monitors access to the monitoring equipment as soon as possible, and not later than 20 days after the interruption, for the exclusive purpose of correcting the problem.

5. Before discharging any fuel from the modified reactors into sections of the spent fuel pools that have contained spent fuel discharged from the reactors prior to their modification, the Russian Party shall move all such spent fuel out of these sections.

6. Given the understanding that the Russian Party currently has no specific plans regarding the reprocessing of the modified-reactor spent fuel, the Russian Party agrees that, before removing such fuel from the spent fuel pools, except in an emergency, it will first declare to the U.S. Party the reason for the removal, the amount of spent fuel to be removed, its destination, and the intended use of any uranium recovered from that material, if known. If the intended use is not known, the Russian Party shall declare to the U.S. Party this intention once it is known. Subsequently, the Russian Party shall declare to the U.S. Party the actual use of that uranium once it has been utilized in a peaceful nuclear activity. Any emergency removal of the spent fuel will require a similar declaration to the U.S. Party, including, as soon as possible but not later than 15 days afterward, the date of and reason for the emergency removal and the new location or destination of the spent fuel.

7. In any case, at either side's request, the sides shall meet within the JICC as described in Article IX of the Agreement to consult over questions arising from such declarations or removals.

#### Article IV

1. The Russian Party shall notify the U.S. Party of the date at least 60 days in advance of each planned loading of fuel into each reactor, beginning with the first core loading of enriched fuel.
2. The Russian Party shall provide the U.S. Party annually with consolidated information on the total mass of high enriched uranium that was used for fuel shipped to the modified reactors that year, and the fraction of that total mass of high enriched uranium that was derived from dismantled nuclear weapons.
3. U.S. monitors shall have the right to observe and make measurements on such fuel at each reactor beginning 3 days prior to the start of its loading and continuing until loading is complete. Measurements shall consist of agreed procedures for weighing an agreed number of individual fresh fuel elements, randomly selected by the U.S. monitors from among the collection of all fuel to be loaded into the reactor for each core loading. If any of the sampled fuel elements is found not to comply with agreed technical specifications, it shall be placed under U.S. seal and permanently removed from the collection to be loaded into the reactor, and the sides shall immediately consult within the JICC to determine necessary actions.
4. The U.S. Party shall provide the equipment it requires for making measurements described in paragraph 3 of this Article, and may leave it under tamper-indicating seals at suitable storage locations at each reactor site.
5. Monitoring visits may occur up to 3 times per year per individual reactor, including visits during refueling. U.S. monitoring visits not coinciding with refueling may consist of teams of up to 4 individuals and are for the purpose as appropriate, of carrying out monitoring activities described in Article II, paragraph 3, Article III, paragraph 3, and Article V of this Subsidiary Arrangement. When refueling is taking place, U.S. monitoring teams may consist of up to 6 individuals of whom no more than 2 monitors may be present in the reactor fueling hall at any time. Monitoring visits not coinciding with refueling shall last up to 2 days per individual reactor. Monitoring visits coinciding with refueling shall last as specified in paragraph 3 of this Article.

#### Article V

1. Each time fuel is discharged from the reactors, the Russian Party shall provide the following information:
  - A. Predicted quantity of plutonium contained in the discharged fuel.
  - B. Average exposure of the fuel at discharge in megawatt-days and the expected Pu-240 isotopic concentration and Pu-238 isotopic concentration of the discharged fuel.
  - C. A list of all channels that are discharged ahead of schedule.
  - D. Mass and enrichment of the uranium that was initially contained in the discharged fuel, and the number of channels from which it is discharged.
  - E. Number of days between the discharged fuel's end of irradiation in the reactor and its removal from the reactor facility, if applicable.
2. If, for example, due to an unplanned discharge or extraordinary circumstances, any amount of discharged fuel from a modified reactor is expected to have its combined Pu-238 plus Pu-240 isotopic concentration less than 20% of total plutonium, averaged over the total fuel discharged,

the Russian Party shall provide within 10 days a written explanation of the reason for such a discharge and, at U.S discretion, the Parties shall promptly arrange for consultation within the JICC to clarify the situation and to determine any remedial steps or additional monitoring activities that may be required.

#### Article VI

Specific monitoring equipment for this Subsidiary Arrangement and detailed procedures for operating this equipment will be agreed by the JICC.

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### **Annex IV 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**

#### Intellectual Property

In accordance with Article VI 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 (hereinafter called the Agreement):

It is not assumed that significant items of intellectual property, with the exception of copyrights, will be created or transmitted in the course of work under the Agreement. However, items of intellectual property that are created or transmitted under the Agreement shall be handled in accordance with the provisions of this Annex, which is an integral part of the Agreement;

The Parties shall assure adequate and effective protection of intellectual property created or transmitted in accordance with the Agreement and shall assure the appropriate implementation of measures associated with this protection;

The Parties agree to inform each other promptly of all items of intellectual property created as a result of work done under the Agreement.

#### I. Scope

1. This Annex shall apply to all joint activity done in accordance with the Agreement unless otherwise specifically agreed by the Parties or their Executive Agents.
2. In the Agreement the term "intellectual property" has the meaning defined in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm on 14 July 1967.
3. This Annex defines the principles governing legal relationships between the Parties in the field of protection and use of items of intellectual property as well as underlying procedures for allocating intellectual property rights. Each Party shall take all necessary measures to assure that the other Party receives all rights stipulated under the Agreement to the possession, use, and transfer of intellectual property by drawing up the appropriate legal documents if necessary, stipulating the transfer of intellectual property rights from a participant in the Agreement to its Party. This Annex shall not alter or replace the legal relationships in the field of intellectual property between a Party and its participants, which are defined by the laws and practice of that Party.

4. Disputes relating to intellectual property associated with the Agreement must be resolved by negotiations between the Parties or their Executive Agents. In the event a dispute cannot be resolved by negotiations, by mutual agreement of the Parties the dispute may be given to an arbitration agency for resolution on the basis of the Agreement and in accordance with the provisions of international law and procedures to which both Parties shall agree in writing.

5. Termination or expiration of the Agreement shall not terminate the rights and obligations arising from this Annex.

6. The conditions of this Annex and their interpretation in the area of legal protection, use of intellectual property, and the allocation of rights shall not extend to and must not be used in the preparation and interpretation of other agreements that are not private agreements (contracts, collaborations) under the Agreement.

## II. Allocation of Rights

1. Each party shall be granted nonexclusive, irrevocable, royalty-free license in all countries of the world to the translation, reproduction, and public distribution of scientific and technical articles, papers, reports, and books produced as a result of joint work under the Agreement. In all publicly distributed copies of copyrighted materials covered by the Agreement the names of the authors must be mentioned unless the authors explicitly express the desire to remain anonymous.

2. If in the process of preparing private agreements (contracts, collaborations) for specific work under the Agreement it becomes evident that intellectual property will be created or transferred during this work, the Parties must stipulate the allocation of rights to the ownership and transfer of such intellectual property in the text of that private agreement. If in the process of concluding a private agreement for specific work the Parties cannot agree on the allocation of rights to intellectual property that may be created during the work, intellectual property may not be a subject of that private agreement (contract, collaboration).

3. Each Party must take all necessary measures so that intellectual property created outside the Agreement and transmitted to the other Party for use under the Agreement is transmitted in accordance with the laws of the transmitting Party.