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A PROPOSED AGREEMENT REGARDING COOPERATION WITH THE GOVERNMENT OF INDIA CONCERNING PEACEFUL USES OF NUCLEAR ENERGY

MESSAGE

FROM

THE PRESIDENT OF THE UNITED STATES

TRANSMITTING

A PROPOSED AGREEMENT FOR COOPERATION BETWEEN THE GOVERNMENT OF THE UNITED STATES AND THE GOVERNMENT OF INDIA CONCERNING PEACEFUL USES OF NUCLEAR ENERGY, PURSUANT TO 42 U.S.C. 2153

SEPTEMBER 11, 2008.—Message and accompanying papers referred to the Committee on Foreign Affairs and ordered to be printed

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U.S. GOVERNMENT PRINTING OFFICE
69–011 WASHINGTON : 2008

To the Congress of the United States:

I am pleased to transmit to the Congress, pursuant to section 123 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2153) (ABA), the text of a proposed Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy. I am also pleased to transmit my written determination concerning the Agreement, including my approval of the Agreement and my authorization to execute the Agreement, and an unclassified Nuclear Proliferation Assessment Statement (NPAS) concerning the Agreement. (In accordance with section 123 of the AEA, as amended by title XII of the Foreign Affairs Reform and Restructuring Act of 1998 (Public Law 105–277), a classified annex to the NPAS, prepared by the Secretary of State in consultation with the Director of National Intelligence, summarizing relevant classified information, will be submitted to the Congress separately.) The joint memorandum submitted to me by the Secretary of State and the Secretary of Energy and a letter from the Chairman of the Nuclear Regulatory Commission stating the views of the Commission are also enclosed.

The proposed Agreement has been negotiated in accordance with the AEA and other applicable law. In my judgment, it meets all applicable statutory requirements except for section 13a. (2) of the AEA, from which I have exempted it as described below.

The proposed Agreement provides a comprehensive framework for U.S. peaceful nuclear cooperation with India. It permits the transfer of information, non-nuclear material, nuclear material, equipment (including reactors) and components for nuclear research and nuclear power production. It does not permit transfers of any restricted data. Sensitive nuclear technology, heavy-water production technology and production facilities, sensitive nuclear facilities, and major critical components of such facilities may not be transferred under the Agreement unless the Agreement is amended. The Agreement permits the enrichment of uranium subject to it up to 20 percent in the isotope 235. It permits reprocessing and other alterations in form or content of nuclear material subject to it; however, in the case of such activities in India, these rights will not come into effect until India establishes a new national reprocessing facility dedicated to reprocessing under IAEA safeguards and both parties agree on arrangements and procedures under which the reprocessing or other alteration in form or content will take place.

In Article 5(6) the Agreement records certain political commitments concerning reliable supply of nuclear fuel given to India by the United States in March 2006. The text of the Agreement does not, however, transform these political commitments into legally

binding commitments because the Agreement, like other U.S. agreements of its type, is intended as a framework agreement.

The Agreement will remain in force for a period of 40 years and will continue in force thereafter for additional periods of 10 years each unless either party gives notice to terminate it 6 months before the end of a period. Moreover, either party has the right to terminate the Agreement prior to its expiration on 1 year's written notice to the other party. A party seeking early termination of the Agreement has the right immediately to cease cooperation under the Agreement, prior to termination, if it determines that a mutually acceptable resolution of outstanding issues cannot be achieved through consultations. In any case the Agreement, as noted, is a framework or enabling agreement that does not compel any specific nuclear cooperative activity. In the event of termination of the Agreement, key nonproliferation conditions and controls would continue with respect to material and equipment subject to the Agreement.

An extensive discussion of India's civil nuclear program, military nuclear program, and nuclear nonproliferation policies and practices is provided in the Nuclear Proliferation Assessment Statement (NPAS) and in a classified annex to the NPAS submitted to the Congress separately.

The AEA establishes the requirements for agreements for nuclear cooperation, some of which apply only to non-nuclear-weapon states (see AEA, section 123a.). The AEA incorporates the definition of "nuclear-weapon state" from the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which defines it to mean a state that has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967. Therefore India is a non-nuclear-weapon state for NPT and AEA purposes, even though it possesses nuclear weapons. The Agreement satisfies all requirements set forth in section 123a. of the AEA except the requirement of section 123a. (2) that, as a condition of continued U.S. nuclear supply under the Agreement, IAEA safeguards be maintained in India with respect to all nuclear materials in all peaceful nuclear activities within its territory, under its jurisdiction, or carried out under its control anywhere (i.e., "full-scope" or "comprehensive" safeguards).

The Henry J. Hyde United States-India Peaceful Atomic Energy Cooperation Act of 2006 (the "Hyde Act") established authority to exempt the Agreement from the full-scope safeguards requirement section 123a.(2) of the AEA, as well as certain other provisions of the AEA relating to supply under such an agreement, provided that the President makes certain determinations and transmits them to the Congress together with a report detailing the basis for the determinations. I have made those determinations, and I am submitting them together with the required report as an enclosure to this transmittal.

Approval of the Agreement, followed by its signature and entry into force, will permit the United States and India to move forward on the U.S.-India Civil Nuclear Cooperation Initiative, which Indian Prime Minister Manmohan Singh and I announced on July 18, 2005, and reaffirmed on March 2, 2006. Civil nuclear cooperation between the United States and India pursuant to the Agree-

ment will offer major strategic and economic benefits to both countries, including enhanced energy security, an ability to rely more extensively on an environmentally friendly energy source, greater economic opportunities, and more robust nonproliferation efforts.

The Agreement will reinforce the growing bilateral relationship between two vibrant democracies. The United States is committed to a strategic partnership with India, the Agreement promises to be a major milestone in achieving and sustaining that goal.

In reviewing the proposed Agreement I have considered the views and recommendations of interested agencies. I have determined that its performance will promote, and will not constitute an unreasonable risk to, the common defense and security. Accordingly, I have approved it and I urge that the Congress also approve it this year.

GEORGE W. BUSH.

THE WHITE HOUSE, *September 10, 2008.*

THE WHITE HOUSE

WASHINGTON

September 10, 2008

Presidential Determination
No. 2008-26

MEMORANDUM FOR THE SECRETARY OF STATE
THE SECRETARY OF ENERGY

SUBJECT: Proposed Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy

I have considered the proposed Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy, along with the views, recommendations, and statements of interested agencies.

I have determined that the performance of the Agreement will promote, and will not constitute an unreasonable risk to, the common defense and security. Pursuant to section 123 b. of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2153(b)), I hereby approve the proposed Agreement and authorize the Secretary of State to arrange for its execution.

In addition, pursuant to the authority vested in me by the Constitution and the laws of the United States of America, including the Henry J. Hyde United States-India Peaceful Atomic Energy Cooperation Act of 2006 (Public Law 109-401), I hereby determine that:

1. India has provided the United States and the IAEA with a credible plan to separate civil and military nuclear facilities, materials, and programs, and has filed a declaration regarding its civil facilities and materials with the IAEA;

2. India and the IAEA have concluded all legal steps required prior to signature by the parties of an agreement requiring the application of IAEA safeguards in perpetuity

in accordance with IAEA standards, principles, and practices (including IAEA Board of Governors Document GOV/1621 (1973)) to India's civil nuclear facilities, materials, and programs as declared in the plan described in paragraph (1), including materials used in or produced through the use of India's civil nuclear facilities;

3. India and the IAEA are making substantial progress toward concluding an Additional Protocol consistent with IAEA principles, practices, and policies that would apply to India's civil nuclear program;

4. India is working actively with the United States for the early conclusion of a multilateral treaty on the cessation of the production of fissile materials for use in nuclear weapons or other nuclear explosive devices;

5. India is working with and supporting United States and international efforts to prevent the spread of enrichment and reprocessing technology to any state that does not already possess full-scale, functioning enrichment or reprocessing plants;

6. India is taking the necessary steps to secure nuclear and other sensitive materials and technology, including through (A) the enactment and effective enforcement of comprehensive export control legislation and regulations; (B) harmonization of its export control laws, regulations, policies, and practices with the guidelines and practices of the Missile Technology Control Regime (MTCR) and the Nuclear Suppliers Group (NSG); and (C) adherence to the MTCR and the NSG in accordance with the procedures of those regimes for unilateral adherence; and

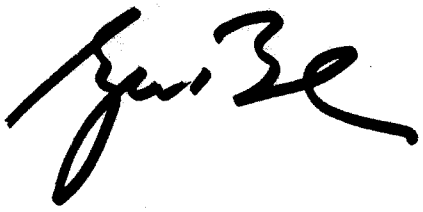
7. The NSG has decided by consensus to permit supply to India of nuclear items covered by the guidelines of the NSG.

I therefore hereby (1) exempt the proposed Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy arranged pursuant to section 123 of the Atomic Energy Act of 1954 (42 U.S.C. 2153) from the requirement of subsection 123 a.(2) of such section; (2) waive the application of section 128 of the Atomic Energy Act of 1954 (42 U.S.C. 2157) with respect to exports to India; and (3) waive with respect to India the application of:

(A) subsection 129 a.(1)(D) of the Atomic Energy Act of 1954 (42 U.S.C. 2158(a)(1)(D)); and

(B) section 129 of the Atomic Energy Act of 1954 (42 U.S.C. 2158) regarding any actions that occurred before July 18, 2005.

The Secretary of State is authorized and directed to publish this determination in the *Federal Register*.



THE SECRETARY OF STATE
WASHINGTON

200814815

September 10, 2008

UNCLASSIFIED

MEMORANDUM FOR THE PRESIDENT

FROM: Condoleezza Rice
Secretary of State

Samuel W. Bodman
Secretary of Energy

SUBJECT: Proposed Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy

U.S. and Indian negotiators have produced the attached proposed Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy ("the Agreement"). The chief negotiators have initialed the text, signifying a desire on each side to proceed to next steps for internal approval, signature, and entry into force. The proposed Agreement is a key element for implementing the U.S.-India Civil Nuclear Cooperation Initiative as set forth in the Joint Statement that you and Indian Prime Minister Manmohan Singh issued on July 18, 2005 in Washington.

In accordance with the provisions of section 123 of the U.S. Atomic Energy Act of 1954, as amended ("the AEA"), the proposed Agreement was negotiated by the Department of State, with the technical assistance and concurrence of the Department of Energy. The proposed Agreement has also been reviewed by the members of the Nuclear Regulatory Commission. Chairman Klein is sending to you a separate letter expressing the Commission's views and recommendations.

UNCLASSIFIED

The proposed Agreement provides a comprehensive framework for peaceful nuclear cooperation between the United States and India. It permits the transfer of information, non-nuclear material, nuclear material, equipment (including reactors) and components for nuclear research and nuclear power production. It does not permit transfers of Restricted Data. Sensitive nuclear technology, heavy-water production technology and production facilities, sensitive nuclear facilities, and major critical components of such facilities may not be transferred under the Agreement unless the Agreement is amended. The Agreement permits the enrichment of uranium subject to it up to 20 percent in the isotope 235. It provides prior consent to reprocessing and other alterations in form or content of nuclear material subject to it; however, in the case of such activities in India, these rights will not come into effect until India establishes a new national reprocessing facility dedicated to reprocessing under IAEA safeguards and both parties agree on arrangements and procedures under which the reprocessing or other alteration in form or content will take place.

Article 5(6) of the Agreement records certain political commitments concerning reliable supply of nuclear fuel that were given to India by the United States on the occasion of your state visit to India in March 2006. The text of the Agreement does not, however, transform these political commitments into legally binding supply commitments.

The Agreement will remain in force for a period of 40 years, and will continue in force thereafter for additional periods of 10 years each unless either party gives notice to terminate it six months before the end of a period. Moreover, either party has the right to terminate the Agreement prior to its expiration on one year's written notice to the other party. A party seeking early termination of the Agreement has the right immediately to cease cooperation under the Agreement, prior to termination, if it determines that a mutually acceptable resolution of outstanding issues cannot be achieved through consultations. In any case, the Agreement is a framework or enabling agreement that does not compel any specific nuclear cooperative activity. In the event of termination of the Agreement, key nonproliferation conditions and controls would continue with respect to material and equipment subject to it.

An extensive discussion of India's civil nuclear program, military nuclear program, and nuclear nonproliferation policies and practices is provided in the Nuclear Proliferation Assessment Statement ("NPAS"), and in a classified annex to the NPAS submitted to you separately.

The AEA establishes the requirements for agreements for nuclear cooperation, some of which apply only to agreements with non-nuclear-weapon states (see AEA, section 123a.). The AEA incorporates the definition of "nuclear-weapon state" from the Treaty on the Non-Proliferation of Nuclear Weapons ("NPT"), which defines it to mean a state that has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967. Therefore India is a non-nuclear-weapon state for NPT and AEA purposes, even though it possesses nuclear weapons. The Agreement satisfies all requirements set forth in section 123a. of the AEA except the requirement of section 123a.(2) that, as a condition of continued U.S. nuclear supply under the Agreement, IAEA safeguards be maintained in India with respect to all nuclear materials in all peaceful nuclear activities within its territory, under its jurisdiction, or carried out under its control anywhere (i.e., "full-scope" or "comprehensive" safeguards).

The AEA provides the authority for you to exempt an agreement from one or more of the requirements of section 123a., based on a determination that such a requirement would be "seriously prejudicial to the achievement of U.S. nonproliferation objectives or otherwise jeopardize the common defense and security." In addition, the Henry J. Hyde United States-India Peaceful Atomic Energy Cooperation Act of 2006 ("the Hyde Act") provides an India-specific authority for you to exempt the Agreement from the full-scope safeguards requirement of section 123a.(2) of the AEA as well as to waive certain other provisions of the AEA relating to supply under such an agreement, provided that you make certain determinations related to implementation of the July 2005 Joint Statement and submit them to Congress together with a report detailing the basis for the determinations. In accordance with section 123d. of the AEA, the Agreement shall not become effective unless Congress adopts, and there is enacted, a joint resolution stating that Congress does favor such Agreement.

If you decide to exempt the Agreement from section 123a.(2) of the AEA, the proposed Agreement will, in our judgment, satisfy all applicable requirements of U.S. law for agreements of its type. We believe, as well, that U.S. cooperation with India in the peaceful uses of nuclear energy under the proposed Agreement will be supportive of U.S. nonproliferation, foreign policy and commercial interests.

RECOMMENDATIONS

That you sign the Presidential Determination at Attachment 1, thereby (1) making the required AEA and Hyde Act determinations, (2) approving and authorizing execution of the Agreement, and (3) exercising the exemption and waiver authorities under the Hyde Act; and

That you sign the transmittal to Congress at Attachment 3 and submit the Agreement at Attachment 4 to Congress for approval (along with the signed Presidential Determination, the Hyde Act Report at Attachment 2, and the Unclassified Nuclear Proliferation Assessment Statement at Attachment 5).

Attachments:

1. Draft Presidential Determination (pursuant to Atomic Energy Act and Hyde Act)
2. Report Pursuant to Hyde Act
3. Draft Transmittal to the Congress
4. Proposed Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy
5. Unclassified Nuclear Proliferation Assessment Statement

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CHAIRMAN

September 8, 2008

The President
The White House
Washington, D.C. 20500

Dear Mr. President:

On behalf of the U.S. Nuclear Regulatory Commission, I am writing to you regarding the proposed Agreement for Cooperation between the Government of the United States and the Government of India Concerning Peaceful Uses of Nuclear Energy. In accordance with the provisions of Section 123 of the Atomic Energy Act of 1954, as amended, the Commission has reviewed the proposed Agreement and related documents provided to the NRC by the Executive Branch. It is the view of the Commission that, in light of the actions taken by the Government of India and the international community, the proposed Agreement meets the criteria required by law, and that it provides a framework for the United States to resume civilian nuclear cooperation with India once it enters into force. Therefore, the Commission recommends that you make the requisite statutory determination and that you approve the proposed Agreement and authorize its execution.

The Commission would also like to take this opportunity to note that Article 4 of the proposed Agreement calls for, but does not require, a two-to-four month timeframe for NRC to act on Indian export license applications. The NRC will make every effort to meet this timeliness goal but must fulfill its obligations under the Atomic Energy Act and the Nuclear Non-Proliferation Act of 1978 to obtain Executive Branch views and to provide an opportunity for public participation in nuclear export licensing proceedings.

Respectfully,

Dale E. Klein

Agreed Text
August 1, 2007

AGREEMENT FOR COOPERATION BETWEEN THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF INDIA CONCERNING PEACEFUL USES OF NUCLEAR ENERGY

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

RECOGNIZING the significance of civilian nuclear energy for meeting growing global energy demands in a cleaner and more efficient manner;

DESIRING to cooperate extensively in the full development and use of nuclear energy for peaceful purposes as a means of achieving energy security, on a stable, reliable and predictable basis;

WISHING to develop such cooperation on the basis of mutual respect for sovereignty, non-interference in each other's internal affairs, equality, mutual benefit, reciprocity and with due respect for each other's nuclear programmes;

DESIRING to establish the necessary legal framework and basis for cooperation concerning peaceful uses of nuclear energy;

AFFIRMING that cooperation under this Agreement is between two States possessing advanced nuclear technology, both Parties having the same benefits and advantages, both committed to preventing WMD proliferation;

NOTING the understandings expressed in the India - U.S. Joint Statement of July 18, 2005 to enable full civil nuclear energy cooperation with India covering aspects of the associated nuclear fuel cycle;

AFFIRMING their support for the objectives of the International Atomic Energy Agency (IAEA) and its safeguards system, as applicable to India and the United States of America, and its importance in ensuring that international cooperation in development and use of nuclear energy for peaceful purposes is carried out under arrangements that will not contribute to the proliferation of nuclear weapons or other nuclear explosive devices;

NOTING their respective commitments to safety and security of peaceful uses of nuclear energy, to adequate physical protection of nuclear material and effective national export controls;

MINDFUL that peaceful nuclear activities must be undertaken with a view to protecting the environment;

MINDFUL of their shared commitment to preventing the proliferation of weapons of mass destruction; and

DESIROUS of strengthening the strategic partnership between them;

Have agreed on the following:

ARTICLE 1 – DEFINITIONS

For the purposes of this Agreement:

(A) "By-product material" means any radioactive material (except special fissionable material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special fissionable material. By-product material shall not be subject to safeguards or any other form of verification under this Agreement, unless it has been decided otherwise by prior mutual agreement in writing between the two Parties.

(B) "Component" means a component part of equipment, or other item so designated by agreement of the Parties.

(C) "Conversion" means any of the normal operations in the nuclear fuel cycle, preceding fuel fabrication and excluding enrichment, by which uranium is transformed from one chemical form to another – for

example, from uranium hexafluoride (UF6) to uranium dioxide (UO2) or from uranium oxide to metal.

(D) "Decommissioning" means the actions taken at the end of a facility's useful life to retire the facility from service in the manner that provides adequate protection for the health and safety of the decommissioning workers and the general public, and for the environment. These actions can range from closing down the facility and a minimal removal of nuclear material coupled with continuing maintenance and surveillance, to a complete removal of residual radioactivity in excess of levels acceptable for unrestricted use of the facility and its site.

(E) "Dual-Use Item" means a nuclear related item which has a technical use in both nuclear and non-nuclear applications.

(F) "Equipment" means any equipment in nuclear operation including reactor, reactor pressure vessel, reactor fuel charging and discharging equipment, reactor control rods, reactor pressure tubes, reactor primary coolant pumps, zirconium tubing, equipment for fuel fabrication and any other item so designated by the Parties.

(G) "High enriched uranium" means uranium enriched to twenty percent or greater in the isotope 235.

(H) "Information" means any information that is not in the public domain and is transferred in any form pursuant to this Agreement and so designated and documented in hard copy or digital form by mutual agreement by the Parties that it shall be subject to this Agreement, but will cease to be information whenever the Party transferring the information or any third party legitimately releases it into the public domain.

(I) "Low enriched uranium" means uranium enriched to less than twenty percent in the isotope 235.

(J) "Major critical component" means any part or group of parts essential to the operation of a sensitive nuclear facility or heavy water production facility.

(K) "Non-nuclear material" means heavy water, or any other material suitable for use in a reactor to slow down high velocity neutrons and increase the likelihood of further fission, as may be jointly designated by the appropriate authorities of the Parties.

(L) "Nuclear material" means (1) source material and (2) special fissionable material. "Source material" means uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235; thorium; any of the foregoing in the form of metal, alloy, chemical compound, or concentrate; any other material containing one or more of the foregoing in such concentration as the Board of Governors of the IAEA shall from time to time determine; and such other materials as the Board of Governors of the IAEA may determine or as may be agreed by the appropriate authorities of both Parties. "Special fissionable material" means plutonium, uranium-233, uranium enriched in the isotope 233 or 235, any substance containing one or more of the foregoing, and such other substances as the Board of Governors of the IAEA may determine or as may be agreed by the appropriate authorities of both Parties. "Special fissionable material" does not include "source material". Any determination by the Board of Governors of the IAEA under Article XX of that Agency's Statute or otherwise that amends the list of materials considered to be "source material" or "special fissionable material" shall only have effect under this Agreement when both Parties to this Agreement have informed each other in writing that they accept such amendment.

(M) "Peaceful purposes" include the use of information, nuclear material, equipment or components in such fields as research, power generation, medicine, agriculture and industry, but do not include use in, research on, or development of any nuclear explosive device or any other military purpose. Provision of power for a military base drawn from any power network, production of radioisotopes to be used for medical purposes in military environment for diagnostics, therapy and sterility assurance, and other similar purposes as may be mutually agreed by the Parties shall not be regarded as military purpose.

(N) "Person" means any individual or any entity subject to the territorial jurisdiction of either Party but does not include the Parties.

(O) "Reactor" means any apparatus, other than a nuclear weapon or other nuclear explosive device, in which a self-sustaining fission chain reaction is maintained by utilizing uranium, plutonium, or thorium or any combination thereof.

(P) "Sensitive nuclear facility" means any facility designed or used primarily for uranium enrichment, reprocessing of nuclear fuel, or fabrication of nuclear fuel containing plutonium.

(Q) "Sensitive nuclear technology" means any information that is not in the public domain and that is important to the design, construction, fabrication, operation, or maintenance of any sensitive nuclear facility, or other such information that may be so designated by agreement of the Parties.

ARTICLE 2 – SCOPE OF COOPERATION

1. The Parties shall cooperate in the use of nuclear energy for peaceful purposes in accordance with the provisions of this Agreement. Each Party shall implement this Agreement in accordance with its respective applicable treaties, national laws, regulations, and license requirements concerning the use of nuclear energy for peaceful purposes.

2. The purpose of the Agreement being to enable full civil nuclear energy cooperation between the Parties, the Parties may pursue cooperation in all relevant areas to include, but not limited to, the following:

a. Advanced nuclear energy research and development in such areas as may be agreed between the Parties;
b. Nuclear safety matters of mutual interest and competence, as set out in Article 3;
c. Facilitation of exchange of scientists for visits, meetings, symposia and collaborative research;
d. Full civil nuclear cooperation activities covering nuclear reactors and aspects of the associated nuclear fuel cycle including technology transfer on an industrial or commercial scale between the Parties or authorized persons;

e. Development of a strategic reserve of nuclear fuel to guard against any disruption of supply over the lifetime of India's reactors;
f. Advanced research and development in nuclear sciences including but not limited to biological research, medicine, agriculture and industry, environment and climate change;
g. Supply between the Parties, whether for use by or for the benefit of the Parties or third countries, of nuclear material;
h. Alteration in form or content of nuclear material as provided for in Article 6;
i. Supply between the Parties of equipment, whether for use by or for the benefit of the Parties or third countries;
j. Controlled thermonuclear fusion including in multilateral projects; and
k. Other areas of mutual interest as may be agreed by the Parties.

3. Transfer of nuclear material, non-nuclear material, equipment, components and information under this Agreement may be undertaken directly between the Parties or through authorized persons. Such transfers shall be subject to this Agreement and to such additional terms and conditions as may be agreed by the Parties. Nuclear material, non-nuclear material, equipment, components and information transferred from the territory of one Party to the territory of the other Party, whether directly or through a third country, will be regarded as having been transferred pursuant to this Agreement only upon confirmation, by the appropriate authority of the recipient Party to the appropriate authority of the supplier Party that such items both will be subject to the Agreement and have been received by the recipient Party.

4. The Parties affirm that the purpose of this Agreement is to provide for peaceful nuclear cooperation and not to affect the unsafeguarded nuclear activities of either Party. Accordingly, nothing in this Agreement shall be interpreted as affecting the rights of the Parties to use for their own purposes nuclear material, non-nuclear material, equipment, components, information or technology produced, acquired or developed by them independent of any nuclear material, non-nuclear material, equipment, components, information or technology transferred to them pursuant to this Agreement. This

Agreement shall be implemented in a manner so as not to hinder or otherwise interfere with any other activities involving the use of nuclear material, non-nuclear material, equipment, components, information or technology and military nuclear facilities produced, acquired or developed by them independent of this Agreement for their own purposes.

ARTICLE 3 – TRANSFER OF INFORMATION

1. Information concerning the use of nuclear energy for peaceful purposes may be transferred between the Parties. Transfers of information may be accomplished through reports, data banks and computer programs and any other means mutually agreed to by the Parties. Fields that may be covered include, but shall not be limited to, the following:

a. Research, development, design, construction, operation, maintenance and use of reactors, reactor experiments, and decommissioning;
b. The use of nuclear material in physical, chemical, radiological and biological research, medicine, agriculture and industry;
c. Fuel cycle activities to meet future world-wide civil nuclear energy needs, including multilateral approaches to which they are parties for ensuring nuclear fuel supply and appropriate techniques for management of nuclear wastes;
d. Advanced research and development in nuclear science and technology;
e. Health, safety, and environmental considerations related to the foregoing;
f. Assessments of the role nuclear power may play in national energy plans;
g. Codes, regulations and standards for the nuclear industry;
h. Research on controlled thermonuclear fusion including bilateral activities and contributions toward multilateral projects such as the International Thermonuclear Experimental Reactor (ITER); and
i. Any other field mutually agreed to by the Parties.

2. Cooperation pursuant to this Article may include, but is not limited to, training, exchange of personnel, meetings, exchange of samples, materials and instruments for experimental purposes and a balanced participation in joint studies and projects.

3. This Agreement does not require the transfer of any information regarding matters outside the scope of this Agreement, or information that the Parties are not permitted under their respective treaties, national laws, or regulations to transfer.

4. Restricted Data, as defined by each Party, shall not be transferred under this Agreement.

ARTICLE 4 – NUCLEAR TRADE

1. The Parties shall facilitate nuclear trade between themselves in the mutual interests of their respective industry, utilities and consumers and also, where appropriate, trade between third countries and either Party of items obligated to the other Party. The Parties recognize that reliability of supplies is essential to ensure smooth and uninterrupted operation of nuclear facilities and that industry in both the Parties needs continuing reassurance that deliveries can be made on time in order to plan for the efficient operation of nuclear installations.

2. Authorizations, including export and import licenses as well as authorizations or consents to third parties, relating to trade, industrial operations or nuclear material movement should be consistent with the sound and efficient administration of this Agreement and should not be used to restrict trade. It is further agreed that if the relevant authority of the concerned Party considers that an application cannot be processed within a two month period it shall immediately, upon request, provide reasoned information to the submitting Party. In the event of a refusal to authorize an application or a delay exceeding four months from the date of the first application the Party of the submitting persons or undertakings may call for urgent consultations under Article 13 of this Agreement, which shall take place at the earliest opportunity and in any case not later than 30 days after such a request.

ARTICLE 5 – TRANSFER OF NUCLEAR MATERIAL, NON-NUCLEAR MATERIAL, EQUIPMENT, COMPONENTS AND RELATED TECHNOLOGY

1. Nuclear material, non-nuclear material, equipment and components may be transferred for applications consistent with this Agreement. Any special fissionable material transferred under this Agreement shall be low enriched uranium, except as provided in paragraph 5.

2. Sensitive nuclear technology, heavy water production technology, sensitive nuclear facilities, heavy water production facilities and major critical components of such facilities may be transferred under this Agreement pursuant to an amendment to this Agreement. Transfers of dual-use items that could be used in enrichment, reprocessing or heavy water production facilities will be subject to the Parties' respective applicable laws, regulations and license policies.

3. Natural or low enriched uranium may be transferred for use as fuel in reactor experiments and in reactors, for conversion or fabrication, or for such other purposes as may be agreed to by the Parties.

4. The quantity of nuclear material transferred under this Agreement shall be consistent with any of the following purposes: use in reactor experiments or the loading of reactors, the efficient and continuous conduct of such reactor experiments or operation of reactors for their lifetime, use as samples, standards, detectors, and targets, and the accomplishment of other purposes as may be agreed by the Parties.

5. Small quantities of special fissionable material may be transferred for use as samples, standards, detectors, and targets, and for such other purposes as the Parties may agree.

6. (a) The United States has conveyed its commitment to the reliable supply of fuel to India. Consistent with the July 18, 2005, Joint Statement, the United States has also reaffirmed its assurance to create the necessary conditions for India to have

assured and full access to fuel for its reactors. As part of its implementation of the July 18, 2005, Joint Statement the United States is committed to seeking agreement from the U.S. Congress to amend its domestic laws and to work with friends and allies to adjust the practices of the Nuclear Suppliers Group to create the necessary conditions for India to obtain full access to the international fuel market, including reliable, uninterrupted and continual access to fuel supplies from firms in several nations.

(b) To further guard against any disruption of fuel supplies, the United States is prepared to take the following additional steps:

i) The United States is willing to incorporate assurances regarding fuel supply in the bilateral U.S.-India agreement on peaceful uses of nuclear energy under Section 123 of the U.S. Atomic Energy Act, which would be submitted to the U.S. Congress.

ii) The United States will join India in seeking to negotiate with the IAEA an India-specific fuel supply agreement.

iii) The United States will support an Indian effort to develop a strategic reserve of nuclear fuel to guard against any disruption of supply over the lifetime of India's reactors.

iv) If despite these arrangements, a disruption of fuel supplies to India occurs, the United States and India would jointly convene a group of friendly supplier countries to include countries such as Russia, France and the United Kingdom to pursue such measures as would restore fuel supply to India.

(c) In light of the above understandings with the United States, an India-specific safeguards agreement will be negotiated between India and the IAEA providing for

safeguards to guard against withdrawal of safeguarded nuclear material from civilian use at any time as well as providing for corrective measures that India may take to ensure uninterrupted operation of its civilian nuclear reactors in the event of disruption of foreign fuel supplies. Taking this into account, India will place its civilian nuclear facilities under India-specific safeguards in perpetuity and negotiate an appropriate safeguards agreement to this end with the IAEA.

ARTICLE 6 – NUCLEAR FUEL CYCLE ACTIVITIES

In keeping with their commitment to full civil nuclear cooperation, both Parties, as they do with other states with advanced nuclear technology, may carry out the following nuclear fuel cycle activities:

i) Within the territorial jurisdiction of either Party, enrichment up to twenty percent in the isotope 235 of uranium transferred pursuant to this Agreement, as well as of uranium used in or produced through the use of equipment so transferred, may be carried out.

ii) Irradiation within the territorial jurisdiction of either Party of plutonium, uranium-233, high enriched uranium and irradiated nuclear material transferred pursuant to this Agreement or used in or produced through the use of non-nuclear material, nuclear material or equipment so transferred may be carried out.

iii) With a view to implementing full civil nuclear cooperation as envisioned in the Joint Statement of the Parties of July 18, 2005, the Parties grant each other consent to reprocess or otherwise alter in form or content nuclear material transferred pursuant to this Agreement and nuclear material and by-product material used in or produced through the use of nuclear material, non-nuclear material, or equipment so transferred. To bring these rights into effect, India will establish a new national reprocessing facility dedicated to reprocessing safeguarded nuclear material under IAEA safeguards and the Parties will agree on arrangements and procedures under which such reprocessing or other alteration in form or content will take place in this new facility. Consultations on arrangements and procedures will begin within six months of a request by either Party and will be concluded within one year. The Parties agree on the

application of IAEA safeguards to all facilities concerned with the above activities. These arrangements and procedures shall include provisions with respect to physical protection standards set out in Article 8, storage standards set out in Article 7, and environmental protections set forth in Article 11 of this Agreement, and such other provisions as may be agreed by the Parties. Any special fissionable material that may be separated may only be utilized in national facilities under IAEA safeguards.

iv) Post-irradiation examination involving chemical dissolution or separation of irradiated nuclear material transferred pursuant to this Agreement or irradiated nuclear material used in or produced through the use of non-nuclear material, nuclear material or equipment so transferred may be carried out.

ARTICLE 7 – STORAGE AND RETRANSFERS

1. Plutonium and uranium 233 (except as either may be contained in irradiated fuel elements), and high enriched uranium, transferred pursuant to this Agreement or used in or produced through the use of material or equipment so transferred, may be stored in facilities that are at all times subject, as a minimum, to the levels of physical protection that are set out in IAEA document INFCIRC 225/REV 4 as it may be revised and accepted by the Parties. Each Party shall record such facilities on a list, made available to the other Party. A Party's list shall be held confidential if that Party so requests. Either Party may make changes to its list by notifying the other Party in writing and receiving a written acknowledgement. Such acknowledgement shall be given no later than thirty days after the receipt of the notification and shall be limited to a statement that the notification has been received. If there are grounds to believe that the provisions of this sub-Article are not being fully complied with, immediate consultations may be called for. Following upon such consultations, each Party shall ensure by means of such consultations that necessary remedial measures are taken immediately. Such measures shall be sufficient to restore the levels of physical protection referred to above at the facility in question. However, if the Party on whose territory the nuclear material in question is stored determines that such measures are not feasible, it

will shift the nuclear material to another appropriate, listed facility it identifies.

2. Nuclear material, non-nuclear material, equipment, components, and information transferred pursuant to this Agreement and any special fissionable material produced through the use of nuclear material, non-nuclear material or equipment so transferred shall not be transferred or re-transferred to unauthorized persons or, unless the Parties agree, beyond the recipient Party's territorial jurisdiction.

ARTICLE 8 – PHYSICAL PROTECTION

1. Adequate physical protection shall be maintained with respect to nuclear material and equipment transferred pursuant to this Agreement and nuclear material used in or produced through the use of nuclear material, non-nuclear material or equipment so transferred.

2. To fulfill the requirement in paragraph 1, each Party shall apply measures in accordance with (i) levels of physical protection at least equivalent to the recommendations published in IAEA document INFCIRC/225/Rev.4 entitled "The Physical Protection of Nuclear Material and Nuclear Facilities," and in any subsequent revisions of that document agreed to by the Parties, and (ii) the provisions of the 1980 Convention on the Physical Protection of Nuclear Material and any amendments to the Convention that enter into force for both Parties.

3. The Parties will keep each other informed through diplomatic channels of those agencies or authorities having responsibility for ensuring that levels of physical protection for nuclear material in their territory or under their jurisdiction or control are adequately met and having responsibility for coordinating response and recovery operations in the event of unauthorized use or handling of material subject to this Article. The Parties will also keep each other informed through diplomatic channels of the designated points of contact within their national authorities to cooperate on matters of out-of-country transportation and other matters of mutual concern.

4. The provisions of this Article shall be implemented in such a manner as to avoid undue interference in the Parties' peaceful nuclear activities and so as to be consistent with prudent management practices required for the safe and economic conduct of their peaceful nuclear programs.

ARTICLE 9 – PEACEFUL USE

Nuclear material, equipment and components transferred pursuant to this Agreement and nuclear material and by-product material used in or produced through the use of any nuclear material, equipment, and components so transferred shall not be used by the recipient Party for any nuclear explosive device, for research on or development of any nuclear explosive device or for any military purpose.

ARTICLE 10 – IAEA SAFEGUARDS

1. Safeguards will be maintained with respect to all nuclear materials and equipment transferred pursuant to this Agreement, and with respect to all special fissionable material used in or produced through the use of such nuclear materials and equipment, so long as the material or equipment remains under the jurisdiction or control of the cooperating Party.

2. Taking into account Article 5.6 of this Agreement, India agrees that nuclear material and equipment transferred to India by the United States of America pursuant to this Agreement and any nuclear material used in or produced through the use of nuclear material, non-nuclear material, equipment or components so transferred shall be subject to safeguards in perpetuity in accordance with the India-specific Safeguards Agreement between India and the IAEA [***identifying data***] and an Additional Protocol, when in force.

3. Nuclear material and equipment transferred to the United States of America pursuant to this Agreement and any nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, or components so transferred shall be subject to the Agreement between the United States of America and the IAEA for the application of safeguards in the United States of America, done at Vienna November 18, 1977, which entered into

force on December 9, 1980, and an Additional Protocol, when in force.

4. If the IAEA decides that the application of IAEA safeguards is no longer possible, the supplier and recipient should consult and agree on appropriate verification measures.

5. Each Party shall take such measures as are necessary to maintain and facilitate the application of IAEA safeguards in its respective territory provided for under this Article.

6. Each Party shall establish and maintain a system of accounting for and control of nuclear material transferred pursuant to this Agreement and nuclear material used in or produced through the use of any material, equipment, or components so transferred. The procedures applicable to India shall be those set forth in the India-specific Safeguards Agreement referred to in Paragraph 2 of this Article.

7. Upon the request of either Party, the other Party shall report or permit the IAEA to report to the requesting Party on the status of all inventories of material subject to this Agreement.

8. The provisions of this Article shall be implemented in such a manner as to avoid hampering, delay, or undue interference in the Parties' peaceful nuclear activities and so as to be consistent with prudent management practices required for the safe and economic conduct of their peaceful nuclear programs.

ARTICLE 11 – ENVIRONMENTAL PROTECTION

The Parties shall cooperate in following the best practices for minimizing the impact on the environment from any radioactive, chemical or thermal contamination arising from peaceful nuclear activities under this Agreement and in related matters of health and safety.

ARTICLE 12 – IMPLEMENTATION OF THE AGREEMENT

1. This Agreement shall be implemented in a manner designed:

a) to avoid hampering or delaying the nuclear activities in the territory of either Party;
b) to avoid interference in such activities;
c) to be consistent with prudent management practices required for the safe conduct of such activities; and
d) to take full account of the long term requirements of the nuclear energy programs of the Parties.

2. The provisions of this Agreement shall not be used to:
a) secure unfair commercial or industrial advantages or to restrict trade to the disadvantage of persons and undertakings of either Party or hamper their commercial or industrial interests, whether international or domestic;
b) interfere with the nuclear policy or programs for the promotion of the peaceful uses of nuclear energy including research and development; or
c) impede the free movement of nuclear material, non nuclear material and equipment supplied under this Agreement within the territory of the Parties.

3. When execution of an agreement or contract pursuant to this Agreement between Indian and United States organizations requires exchanges of experts, the Parties shall facilitate entry of the experts to their territories and their stay therein consistent with national laws, regulations and practices. When other cooperation pursuant to this Agreement requires visits of experts, the Parties shall facilitate entry of the experts to their territory and their stay therein consistent with national laws, regulations and practices.

ARTICLE 13 – CONSULTATIONS

1. The Parties undertake to consult at the request of either Party regarding the implementation of this Agreement and the development of further cooperation in the field of peaceful uses of nuclear energy on a stable, reliable and predictable basis. The Parties recognize that such consultations are between two States with advanced nuclear technology, which have agreed to assume the same responsibilities and practices and acquire the same benefits and advantages as other leading countries with advanced nuclear technology.

2. Each Party shall endeavor to avoid taking any action that adversely affects cooperation envisaged under Article 2 of this Agreement. If either Party at any time following the entry into force of this Agreement does not comply with the provisions of this Agreement, the Parties shall promptly hold consultations with a view to resolving the matter in a way that protects the legitimate interests of both Parties, it being understood that rights of either Party under Article 16.2 remain unaffected.

3. Consultations under this Article may be carried out by a Joint Committee specifically established for this purpose. A Joint Technical Working Group reporting to the Joint Committee will be set up to ensure the fulfillment of the requirements of the Administrative Arrangements referred to in Article 17.

ARTICLE 14 – TERMINATION AND CESSATION OF COOPERATION

1. Either Party shall have the right to terminate this Agreement prior to its expiration on one year's written notice to the other Party. A Party giving notice of termination shall provide the reasons for seeking such termination. The Agreement shall terminate one year from the date of the written notice, unless the notice has been withdrawn by the providing Party in writing prior to the date of termination.

2. Before this Agreement is terminated pursuant to paragraph 1 of this Article, the Parties shall consider the relevant circumstances and promptly hold consultations, as provided in Article 13, to address the reasons cited by the Party seeking termination. The Party seeking termination has the right to cease further cooperation under this Agreement if it determines that a mutually acceptable resolution of outstanding issues has not been possible or cannot be achieved through consultations. The Parties agree to consider carefully the circumstances that may lead to termination or cessation of cooperation. They further agree to take into account whether the circumstances that may lead to termination or cessation resulted from a Party's serious concern about a changed security environment or as a response to similar actions by other States which could impact national security.

3. If a Party seeking termination cites a violation of this Agreement as the reason for notice for seeking termination, the Parties shall consider whether the action was caused inadvertently or otherwise and whether the violation could be considered as material. No violation may be considered as being material unless corresponding to the definition of material violation or breach in the Vienna Convention on the Law of Treaties. If a Party seeking termination cites a violation of an IAEA safeguards agreement as the reason for notice for seeking termination, a crucial factor will be whether the IAEA Board of Governors has made a finding of non-compliance.

4. Following the cessation of cooperation under this Agreement, either Party shall have the right to require the return by the other Party of any nuclear material, equipment, non-nuclear material or components transferred under this Agreement and any special fissionable material produced through their use. A notice by a Party that is invoking the right of return shall be delivered to the other Party on or before the date of termination of this Agreement. The notice shall contain a statement of the items subject to this Agreement as to which the Party is requesting return. Except as provided in provisions of Article 16.3, all other legal obligations pertaining to this Agreement shall cease to apply with respect to the nuclear items remaining on the territory of the Party concerned upon termination of this Agreement.

5. The two Parties recognize that exercising the right of return would have profound implications for their relations. If either Party seeks to exercise its right pursuant to paragraph 4 of this Article, it shall, prior to the removal from the territory or from the control of the other Party of any nuclear items mentioned in paragraph 4, undertake consultations with the other Party. Such consultations shall give special consideration to the importance of uninterrupted operation of nuclear reactors of the Party concerned with respect to the availability of nuclear energy for peaceful purposes as a means of achieving energy security. Both Parties shall take into account the potential negative consequences of such termination on the on-going contracts and projects initiated under this Agreement of significance for the respective nuclear programmes of either Party.

6. If either Party exercises its right of return pursuant to paragraph 4 of this Article, it shall, prior to the removal from the territory or from the control of the other Party, compensate promptly that Party for the fair market value thereof and for the costs incurred as a consequence of such removal. If the return of nuclear items is required, the Parties shall agree on methods and arrangements for the return of the items, the relevant quantity of the items to be returned, and the amount of compensation that would have to be paid by the Party exercising the right to the other Party.

7. Prior to return of nuclear items, the Parties shall satisfy themselves that full safety, radiological and physical protection measures have been ensured in accordance with their existing national regulations and that the transfers pose no unreasonable risk to either Party, countries through which the nuclear items may transit and to the global environment and are in accordance with existing international regulations.

8. The Party seeking the return of nuclear items shall ensure that the timing, methods and arrangements for return of nuclear items are in accordance with paragraphs 5, 6 and 7. Accordingly, the consultations between the Parties shall address mutual commitments as contained in Article 5.6. It is not the purpose of the provisions of this Article regarding cessation of cooperation and right of return to derogate from the rights of the Parties under Article 5.6.

9. The arrangements and procedures concluded pursuant to Article 6(iii) shall be subject to suspension by either Party in exceptional circumstances, as defined by the Parties, after consultations have been held between the Parties aimed at reaching mutually acceptable resolution of outstanding issues, while taking into account the effects of such suspension on other aspects of cooperation under this Agreement.

ARTICLE 15 – SETTLEMENT OF DISPUTES

Any dispute concerning the interpretation or implementation of the provisions of this Agreement shall be promptly negotiated by the Parties with a view to resolving that dispute.

ARTICLE 16 – ENTRY INTO FORCE AND DURATION

1. This Agreement shall enter into force on the date on which the Parties exchange diplomatic notes informing each other that they have completed all applicable requirements for its entry into force.

2. This Agreement shall remain in force for a period of 40 years. It shall continue in force thereafter for additional periods of 10 years each. Each Party may, by giving 6 months written notice to the other Party, terminate this Agreement at the end of the initial 40 year period or at the end of any subsequent 10 year period.

3. Notwithstanding the termination or expiration of this Agreement or withdrawal of a Party from this Agreement, Articles 5.6(c), 6, 7, 8, 9, 10 and 15 shall continue in effect so long as any nuclear material, non-nuclear material, by-product material, equipment or components subject to these articles remains in the territory of the Party concerned or under its jurisdiction or control anywhere, or until such time as the Parties agree that such nuclear material is no longer usable for any nuclear activity relevant from the point of view of safeguards.

4. This Agreement shall be implemented in good faith and in accordance with the principles of international law.

5. The Parties may consult, at the request of either Party, on possible amendments to this Agreement. This Agreement may be amended if the Parties so agree. Any amendment shall enter into force on the date on which the Parties exchange diplomatic notes informing each other that their respective internal legal procedures necessary for the entry into force have been completed.

ARTICLE 17 – ADMINISTRATIVE ARRANGEMENT

1. The appropriate authorities of the Parties shall establish an Administrative Arrangement in order to provide for the effective implementation of the provisions of this Agreement.

2. The principles of fungibility and equivalence shall apply to nuclear material and non-nuclear material subject to this Agreement. Detailed provisions for applying these principles shall be set forth in the Administrative Arrangement.

3. The Administrative Arrangement established pursuant to this Article may be amended by agreement of the appropriate authorities of the Parties.

IN WITNESS WHEREOF the undersigned, being duly authorized, have signed this Agreement.

DONE at , this day of , 200 , in duplicate.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

FOR THE GOVERNMENT OF INDIA:

AGREED MINUTE

During the negotiation of the Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy ("the Agreement") signed today, the following understandings, which shall be an integral part of the Agreement, were reached.

Proportionality

For the purposes of implementing the rights specified in Articles 6 and 7 of the Agreement with respect to special fissionable material and by-product material produced through the use of nuclear material and non-nuclear material, respectively, transferred pursuant to the Agreement and not used in or produced through the use of equipment transferred pursuant to the Agreement, such rights shall in practice be applied to that proportion of special fissionable material and by-product material produced that represents the ratio of transferred nuclear material and non-nuclear material, respectively, used in the production of the special fissionable material and by-product material to the total amount of nuclear material and non-nuclear material so used, and similarly for subsequent generations.

By-product material

The Parties agree that reporting and exchanges of information on by-product material subject to the Agreement will be limited to the following:

(1) Both Parties would comply with the provisions as contained in the IAEA document GOV/1999/19/Rev.2, with regard to by-product material subject to the Agreement.

(2) With regard to tritium subject to the Agreement, the Parties will exchange annually information pertaining to its disposition for peaceful purposes consistent with Article 9 of this Agreement.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

FOR THE GOVERNMENT OF INDIA:

NUCLEAR PROLIFERATION ASSESSMENT STATEMENT

**Pursuant to Section 123a. of the
Atomic Energy Act of 1954, as Amended,
With Respect to the Proposed Agreement for Cooperation Between
The Government of the United States of America and
The Government of India
Concerning Peaceful Uses of Nuclear Energy**

This Nuclear Proliferation Assessment Statement ("NPAS") relates to the proposed Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy (the "Agreement"). The Agreement is being submitted to the President jointly by the Secretary of State and the Secretary of Energy for his approval.

Section 123a. of the Atomic Energy Act, as amended (the "Atomic Energy Act" or "the AEA"), provides that an NPAS be submitted by the Secretary of State to the President on each new or amended agreement for cooperation concluded pursuant to that section. Pursuant to section 123a., the NPAS must analyze the consistency of the text of the proposed agreement with all the requirements of the AEA, with specific attention to whether the proposed agreement is consistent with each of the criteria set forth in that subsection, and address the adequacy of the safeguards and other control mechanisms and the peaceful use assurances contained in the agreement for cooperation to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose.

With this statutory mandate in mind, this NPAS: (a) provides background information on India's civil nuclear program and the military nuclear program from which it is being separated (Part I); (b) describes the nature and scope of the cooperation contemplated in the proposed Agreement (Part II); (c) reviews the applicable substantive requirements of the AEA and the Nuclear Non-Proliferation Act of 1978 ("NNPA") and details how they are met by the proposed Agreement (Part III); (d) addresses additional relevant policy issues (Part IV); and (e) sets

forth the net assessment, conclusions, views and recommendations of the Department of State as contemplated by section 123a. of the AEA (Part V).

INTRODUCTION: THE U.S.-INDIA CIVIL NUCLEAR COOPERATION INITIATIVE

The U.S.-India Civil Nuclear Cooperation Initiative, of which the proposed U.S.-India Agreement for Peaceful Nuclear Cooperation is the central element, was announced in a Joint Statement by President Bush and Indian Prime Minister Manmohan Singh in Washington on July 18, 2005 "Joint Statement"). For the United States the Initiative is premised on its contribution to U.S. national security interests by establishing a broad strategic partnership with India that encourages India's emergence as a positive force on the world scene. India is a rising global power and an important democratic partner for the United States. The United States and India are bound together by a strong congruence of interests and values. For example, the United States is seeking to work with India to win the global War on Terrorism, to prevent the spread of weapons of mass destruction and the missiles that could deliver them, to enhance peace and stability in Asia, and to advance the spread of democracy. In the context of this growing partnership, the United States and India issued a landmark Joint Statement in July 2005 to work toward full civil nuclear cooperation while at the same time strengthening global nonproliferation efforts.

India believes, and the United States agrees, that it needs nuclear power to sustain dynamic economic growth and to address its growing energy requirements in an affordable and environmentally-responsible manner. The U.S. goal – in the context of the Joint Statement – is to provide India access to the technology it needs to build a safe, modern and efficient infrastructure that will provide clean, peaceful nuclear energy.

At the same time, India has clearly demonstrated over the past several years its desire to work with the United States and the international community to fight the spread of sensitive nuclear and other technologies. As part of an effort launched with India during the Administration's first term – the Next Steps in Strategic Partnership – India took a number of significant steps to strengthen export controls and to ensure that Indian companies would not be a source of future proliferation. Not only did India pledge to bring its export control laws, regulations, and enforcement practices in line with international export control standards, but it also passed an extensive export control law and issued an upgraded national control list that will help it achieve this goal. India is a

signatory to the Biological and Toxin Weapons Convention and the Chemical Weapons Convention, and reports annually to the UN Register of Conventional Arms. In addition, India has become a party to the Convention on the Physical Protection of Nuclear Material, ratified the International Convention for the Suppression of Acts of Nuclear Terrorism, and supports the IAEA Code of Conduct on Safety and Security of Radioactive Sources. India is also a partner in the Global Initiative to Combat Nuclear Terrorism. With respect to its UNSCR 1540 obligations, India has submitted a national report and two addenda to the Committee and currently is represented on the UNSCR 1540 Experts Committee.

With respect to strategic trade enforcement, India has bilateral customs cooperation agreements in place with a number of countries, including with the United States, and has announced its intent to join the Department of Homeland Security's Container Security Initiative. In addition, India participates in the Department of Energy's Megaports Initiative radiation portal monitor program and has deployed advanced scanners at seaports to screen container cargo for arms, explosives, WMD, and other contraband. India also has participated as an official observer of Proliferation Security Initiative regional interdiction exercises.

The additional nonproliferation commitments India has made as part of the Joint Statement go even further and will bring it into closer conformity with international nuclear nonproliferation standards and practices. While the United States will continue to work with India to encourage it to do more over time, India's implementation of its commitments will, on balance, enhance global nonproliferation efforts. The United States expects that the international nuclear nonproliferation regime will emerge stronger as a result.

Through the Joint Statement, India publicly committed to take the following important nonproliferation steps:

- Identify and separate its civilian and military nuclear facilities and programs and file a declaration with the International Atomic Energy Agency (IAEA) regarding its civilian facilities;

- Place voluntarily its civilian nuclear facilities under IAEA safeguards;

- Sign and adhere to an Additional Protocol with the IAEA with respect to its civilian nuclear facilities;

- Continue its unilateral moratorium on nuclear testing;

• Work with the United States for the conclusion of a multilateral Fissile Material Cut-Off Treaty (FMCT) to halt production of fissile material for nuclear weapons;

• Refrain from the transfer of enrichment and reprocessing technologies to states that do not have them, and support efforts to limit their spread; and

• Secure nuclear and missile materials and technologies through comprehensive export control legislation and through harmonization and adherence to the Missile Technology Control Regime (MTCR) and the Nuclear Suppliers Group (NSG) guidelines.

India's commitment to separate its civil and military facilities and place its civil facilities and activities under IAEA safeguards demonstrates its willingness to assume full responsibility for preventing proliferation from its civil nuclear program. It will also help protect against diversion of nuclear material and technologies to India's nuclear weapon program.

By adopting an Additional Protocol with the IAEA, India will commit to reporting to the IAEA on exports of all NSG Trigger List items. This will help the IAEA track potential proliferation elsewhere, and bolster U.S. efforts to encourage all states to adopt an Additional Protocol as a condition of supply.

By committing to adopt strong and effective export controls, including adherence to NSG and MTCR Guidelines, India will help ensure that its companies do not transfer sensitive weapons of mass destruction and missile-related technologies to countries of concern.

In July 2005, India took an important step by harmonizing its national control list with the NSG Guidelines and by adding many items that appear on the MTCR Annex.

India has also committed to work with the United States toward the conclusion of a multilateral FMCT, which, if successfully negotiated and ratified, will ban the production of fissile material for use in nuclear weapons or other nuclear explosive devices.

India's pledge to maintain its nuclear testing moratorium contributes to nonproliferation efforts by making its ending of nuclear explosive tests one of the

conditions of full civil nuclear cooperation. Since to date Pakistan has test-exploded nuclear weapons only in response to Indian nuclear tests, this commitment may help diminish the prospects for future nuclear testing in South Asia.

By committing not to export enrichment and reprocessing technology to states that do not already have such fully-functioning capabilities, India will help the United States achieve its goal of preventing the further spread of such proliferation sensitive equipment and technology.

Each of these steps is significant. Together, they constitute a substantial shift in moving India into closer conformity with international nonproliferation standards and practices. Their successful implementation will help to strengthen the global nonproliferation regime.

On a reciprocal basis with India's commitments, the United States committed to work to achieve full civil nuclear cooperation with India. The proposed U.S.-India Agreement for Peaceful Nuclear Cooperation constitutes a core element of that commitment.

I. INDIA'S NUCLEAR PROGRAMS AND POLICIES

India's Energy Needs

India, a nation of more than one billion people today, with an economy growing in the range of 8 percent per year, faces real and growing energy needs. Substantial population growth, expanding industrial production, economic development, urbanization, and growth in transportation sector energy consumption are all driving strong energy demand. Between 1980 and 2001, demand increased by 208 percent. By contrast, China, often thought of as the world's next big energy consumer, saw a 130 percent increase over the same period. In 2003, India was the sixth largest consumer of energy in the world behind only the United States, China, Russia, Japan, and Germany.

To meet these growing demands, the Indian Government plans to double its capacity to produce electricity within the next seven years. At present, almost 55 percent of India's 127 gigawatt (GW) total installed energy generating capacity is derived from coal; roughly 26 percent from hydro-electric power; 11 percent from

natural gas; and almost 5 percent from renewable sources. Just 3 percent of India's total power generation comes from nuclear energy.

Indian energy officials project that by 2031-32, roughly a quarter century from now, India will have a total energy requirement of 700 GW, of which the nuclear component is expected to comprise 63 GW, or approximately nine percent. India will also require large-scale infrastructure investments and upgrades, including transmission and distribution, as a result of a five-fold increase in electrical power consumption.

Nuclear Energy in India

India has a substantial and growing nuclear infrastructure. Its current capabilities span the nuclear fuel cycle. Indian nuclear facilities include various uranium processing capabilities (uranium mining and milling, copper mine tailing extraction, uranium conversion, fuel fabrication, enrichment); thermal and breeder reactors; research reactors; heavy water production facilities; and spent fuel reprocessing facilities. As of early 2007, the Nuclear Power Corporation of India, Ltd. (NPCIL) operated 16 power reactors, and an additional six are currently under construction. Bharatiya Nabhikiya Vidyut Nigam, Ltd. (Bhavini) operates a 40 MWe fast breeder test reactor and is currently building a 500 MWe prototype fast breeder reactor.

India's operating civil nuclear power plants currently have approximately 3,900 megawatts (MWe) of installed electricity generation capacity, based on the 14 pressurized heavy water reactors (PHWRs) and two boiling water reactors (BWRs) currently on-line. An additional four PHWRs, two light water reactors (LWRs), and the prototype fast breeder reactor (FBR) currently under construction should add an additional 3,380 MWe when operational, bringing the total installed nuclear energy generating capacity to approximately 7,280 MWe. Indian officials have stated their intent to increase the installed nuclear capacity to 20,000 MWe by 2020—a five-fold increase over present output and a goal that cannot be obtained absent substantial foreign assistance.

Over time, the Indian Government intends to increase the nuclear component of its energy output to approximately 20 percent of India's total energy production, thus significantly decreasing the growth in its reliance on fossil fuels. Senior officials in India's atomic energy establishment have indicated their desire to exceed the 20,000 MWe target through the accelerated import of high-unit capacity foreign reactors.

To this end, Indian officials have begun to discuss their long-term plans with American, Russian, French, and other potential vendors. In early 2007, India and Russia announced a statement of intent to field an additional four LWRs at Kudankulam, one of three planned "nuclear parks" set aside for international supply. While Russia is already supplying two LWRs at Kudankulam—a "grandfathered" arrangement dating to a time prior to establishment of the Nuclear Suppliers Group (NSG) full-scope safeguards export guideline—the expanded deal is predicated on positive NSG action to enable civil nuclear cooperation with India. American companies would similarly like the chance to compete, on a level playing field, to supply India's civil nuclear program. The recent NSG decision by consensus to except India from the full-scope safeguards export condition is a principal enabling step for potential suppliers. Positive Congressional action on the proposed U.S.-India Agreement for Peaceful Nuclear Cooperation is an additional step necessary to open the Indian civil nuclear market to U.S. industry.

India's Three-Stage (Thorium) Program

India has long sought to implement a three-stage nuclear power program to meet its growing energy needs. The Department of Atomic Energy (DAE) argues that in the context of India's "modest" uranium reserves but substantial thorium reserves, large scale deployment of nuclear energy is best realized through eventual use of thorium. According to a report issued by the IAEA, India has limited uranium reserves, consisting of approximately 54,636 tons of "reasonably assured resources," 25,245 tons of "estimated additional resources," 15,488 tons of "undiscovered conventional resources," and 17,000 tons of "speculative" resources.

India's known and recoverable uranium resources are insufficient to generate, on a sustainable basis, a capable civil nuclear energy program. According to NPCIL, India's uranium reserves are sufficient to generate perhaps 10,000 MW of electricity for 40 years. Together with India's current installed capacity, once the seven reactors currently under construction come on-line India's total installed nuclear capacity will rise to more than 70 percent of this sum. This is inadequate to meet India's energy requirements.

By contrast, India has roughly one-third of the world's known thorium reserves. Natural uranium is a source material that can be used in a nuclear reactor to produce energy through nuclear fission. Thorium must first be converted to a fissile material, uranium-233, in a reactor. For more than four decades DAE has

sought to develop the capability to use thorium, based on a closed nuclear fuel cycle, for large-scale nuclear energy production. The three-stage program it has sought to implement involves: (1) natural uranium-fueled pressurized heavy water reactors (PHWRs); (2) fast breeder reactors using plutonium-based fuel; and (3) advanced nuclear power systems based on a thorium-uranium-233 cycle. In theory, DAE argues, breeder reactors, using plutonium produced through domestic uranium sources, could generate perhaps 500 GW of electricity.

Despite years of effort, however, India's three-stage program has advanced slowly. India's Atomic Energy Commission projected in 1954 that India would achieve a target of 3 GWe by 1975 and 8 GWe by 1980; instead it hit 540 MWe through 1980, and produces roughly 3 GWe today. As noted above, India is also far short of achieving its goal of 20 GWe of installed capacity by 2020 or its projections that upwardly revise this target. While Indian officials continue to seek the long-term energy independence that, in principle, could be achieved through successful implementation of its three-stage nuclear program, in practice it is clear that India must import fuel, reactors, and other technologies that it has been denied for more than three decades under international export control policies to meet its nuclear electricity-generating targets. With the NSG decision to enable supply of Trigger List items to India, prospective international suppliers now have the ability to supply nuclear-related items to India for peaceful uses.

Civil vs. Military

India's existing nuclear infrastructure is today largely unsafeguarded: only four (rising to six, once Kudankulam-1 and -2 come on-line) power reactors and related nuclear material are currently under International Atomic Energy Agency safeguards. This accounts for approximately 19 percent of India's total current nuclear energy output. India's existing nuclear infrastructure is today fundamentally intertwined, serving both civil and military or strategic purposes; the Indian government states that its strategic program is an "offshoot" of its research on civil nuclear power, and consequently "it is embedded in a larger undifferentiated programme." In the July 2005 U.S.-India Joint Statement, India committed to identify and separate its civil and military nuclear facilities and programs in a phased manner, placing the civil aspects under safeguards and an Additional Protocol with the IAEA. In this context, India has undertaken to ensure that any international civil nuclear cooperation would not be diverted from civil purposes or transferred to third countries without safeguards or on an otherwise unauthorized basis.

Overview of India's Separation Plan

The Indian government released its plan to separate India's civil and military nuclear facilities on March 7, 2006; it updated this document on May 11, 2006 and asked the IAEA to circulate it to Member States on July 25, 2008 (IAEA document INFCIRC/731). Because India's existing nuclear infrastructure is intertwined, identification of purely civil facilities and programs that have no strategic implications proved a significant challenge. As its plan developed, the Indian government decided that the nature of the facility concerned, the activities undertaken in it, the national security significance of materials, and the location of the facilities were critical factors in determining what to declare as civilian. (In this context, India did not define or distinguish "military" from "strategic" facilities. The latter may include those having a military role, but also those having a role in India's three stage nuclear energy program.) Similarly, issues relating to fuel resource sustainability, technical design, economic viability, and smooth reactor operation were notable Indian decision criteria. The final plan released by the Indian government notes that India's approach to the separation of its facilities would be guided by the following principles:

- Credible, feasible, and implementable in a transparent manner;
- Consistent with the understandings of the July 18, 2005 Joint Statement;
- Consistent with India's national security and research and development requirements, as well as not prejudicial to India's three-stage nuclear program;
- Must be cost-effective in its implementation; and
- Must be acceptable to India's Parliament and public opinion.

Derived from these principles, India's plan:

- Includes in the civilian list "only those facilities to be offered for safeguards that, after separation, will no longer be engaged in activities of strategic significance";
- Requires a judgment on the overarching criterion of whether subjecting a facility to IAEA safeguards would impact adversely India's national security;
- Excludes a facility from the civilian list if it is located in a larger hub of strategic significance, even if it does not engage in activities of strategic significance; and accordingly

- Identifies only those facilities that India has determined not to be relevant to its strategic program.

Specifically, India parses its existing and developmental nuclear infrastructure as follows:

- Thermal reactors: India identifies as civil 14 thermal reactors, which according to the March 2006 Separation Plan were scheduled to be offered for safeguards between 2006 and 2014. These include the four existing foreign-supplied reactors (TAPS-1 and -2 (the U.S.-supplied Tarapur reactors), RAPS-1 and -2) and the two foreign-supplied reactors under construction (KK-1 and -2). These also include eight indigenous PHWRs, each with a generating capacity of 220 MWe: RAPS-3, -4, -5 and -6, KAPS-1 and -2, and NAPS-1 and -2. India further notes that safeguards will be applied in a phased manner consistent with its agreement with the IAEA. Eight indigenous PHWRs (TAPS-3 and -4, MAPS-1 and -2, Kaiga-1, -2, -3 and -4) are to remain outside of safeguards.

- Fast breeder reactors: India opted to continue unsafeguarded operations at its operating fast breeder test reactor and also to exclude its prototype fast breeder reactor from safeguards. The fast breeder program is currently at the research and development stage and will take time to reach an advanced stage of development, according to India. India seeks to ensure that it does not face any external "encumbrances" in this process, and so chooses to exclude them from safeguards at this time. India and the United States could not engage in the type of nuclear fuel cycle cooperation authorized by the Hyde Act, the Atomic Energy Act, and the U.S.-India Agreement for Peaceful Nuclear Cooperation with regard to India's breeder reactors until India declared them "civil" and placed them under safeguards.

- Future reactors: India states that it will place under IAEA safeguards "all future civilian thermal power reactors and civilian breeder reactors," retaining for itself the right to determine such reactors as civilian. The United States and other potential suppliers to India have international, and in many cases domestic, legal and policy requirements to ensure that the types of items supplied under their agreements for peaceful nuclear cooperation serve exclusively the civil sector. All reactors, and the material that passes through them, supplied by the United States or by India's other international partners will by definition be "civil" and be subject to IAEA safeguards in perpetuity. While India retains the right to develop indigenous facilities for

either civil or military purposes in the future, the separation plan notes that all future thermal and breeder reactors declared "civil" will also be placed under safeguards. Because India seeks the maximum benefit from international cooperation, as a result of India's enduring and expanding energy requirements, and based on bilateral discussions, the United States expects the vast majority of future nuclear program growth to occur in India's civil sector.

- Research reactors: India will permanently shut down the CIRUS plutonium production reactor in 2010. It will also place the foreign-supplied fuel core from the APSARA reactor under safeguards in 2010. India has not declared as civil the Dhruva research reactor, the Advanced Heavy Water Reactor, and activities relating to naval nuclear propulsion at Kalpakkam.

- Upstream facilities: India's separation plan designates as civil the following specific facilities associated with the Nuclear Fuel Complex: the Uranium Oxide Plant (Block A); both the Palletizing and the Assembly Ceramic Fuel Fabrication Plants (Block A); the Enriched Uranium Oxide Plant; the Enriched Fuel Fabrication Plant; and the Gadolina Facility. The heavy water production plants at Thal, Tuticorin, and Hazira will also be designated as civil. While India does not consider them as "relevant for safeguards purposes," at a minimum India's Additional Protocol is expected to include them. India decided not to designate for civilian uses three additional heavy water production plants, as well as other Nuclear Fuel Complex facilities.

- Downstream facilities: India plans to continue the current policy of possible "campaign-mode" safeguards with respect to the Tarapur Power Reactor Fuel Reprocessing Plant (PREFRE). Moreover, both the Tarapur and Rajasthan "Away from Reactor" spent fuel storage pools will be made available for safeguards. India decided not to declare as civil its other spent fuel reprocessing facilities, as well as its indigenous uranium enrichment capability. Subsequent to India's March 2006 separation plan, the Indian government decided to pursue development of a new civil facility dedicated to reprocessing material under safeguards. Development of this facility (and agreement with the United States on arrangements and procedures related thereto) will be required to bring into effect the "programmatic consent" in Article 6 of the Agreement.

- Research facilities: Finally, India plans to declare as civil nine research facilities: the Tata Institute of Fundamental Research; the Variable Energy

Cyclotron Centre; the Saha Institute of Nuclear Physics; the Institute for Plasma Research; the Institute of Mathematics Science; the Institute of Physics; the Tata Memorial Centre; the Board of Radiation and Isotope Technology; and the Harish Chandra Research Institute. India expects these civil facilities to play a "prominent role" in international cooperation. Other Indian nuclear and nuclear-related facilities—such as those in the Bhaba Atomic Research Center (BARC) or in the Indira Gandhi Center for Advanced Research (IGCAR)—were not declared as civil, presumably because they retain a military or strategic role.

The United States assesses India's plan to be credible, transparent, and defensible from a nonproliferation standpoint. When implemented, the total installed nuclear capacity under safeguards will rise from 19 percent today to 65 percent, a percentage that will increase to more than 80 percent as India further expands its civil infrastructure through foreign supply and indigenous development. Based on India's safeguards agreement with the IAEA (discussed below), appropriate safeguards will cover India's civil nuclear fuel cycle and provide strong assurances to supplier states that material and technology provided or generated through civil nuclear cooperation will not be diverted either to the military sphere or for unauthorized purposes. In addition, the total portion of India's spent fuel and plutonium stockpiles under safeguards will rise substantially over time (although the reprocessing consent in Article 6 of the U.S.-India Agreement for Peaceful Nuclear Cooperation, if and when the consent comes into effect, could increase modestly the quantity of separated civil plutonium stored in India).

II. NATURE AND SCOPE OF THE COOPERATION CONTEMPLATED BY THE PROPOSED AGREEMENT

Article 2(2) of the Proposed Agreement describes in general terms the kinds of cooperative activities envisaged. These are to take place in accordance with the provisions of the Agreement and each Party's applicable treaties, national laws, regulations, and license requirements and may include, but are not limited to, the following areas:

- Advanced nuclear energy research and development in areas agreed by the Parties;

- Nuclear safety matters;

- Facilitation of exchange of scientists for visits, meetings, symposia and collaborative research;

- Full civil nuclear cooperation activities covering nuclear reactors and aspects of the associated nuclear fuel cycle including technology transfer on an industrial or commercial scale between the Parties or authorized persons;

- Development of a strategic reserve to guard against any disruption of supply over the lifetime of India's reactors;

- Advanced research and development in nuclear sciences including biological research, medicine, agriculture and industry, environment and climate change;

- Supply between the Parties, whether for use by or for the benefit of the Parties or third countries, of nuclear material;

- Alteration in form or content of nuclear material as provided for in Article 6 of the Agreement;

- Supply between the Parties of equipment, whether for use by or for the benefit of the Parties or third countries;

- Controlled thermonuclear fusion including in multilateral projects; and

- Other areas of mutual interest as may be agreed by the Parties.

In Article 2(4) of the Agreement the Parties further delimit the scope of cooperation by affirming that the purpose of the Agreement is to provide for peaceful nuclear cooperation and not to affect the unsafeguarded nuclear activities of either Party. Nothing in the Agreement is to be interpreted as affecting the rights of the Parties to use for their own purposes nuclear material, non-nuclear material, equipment, components, information or technology produced, acquired or developed by them independent of any nuclear material, non-nuclear material, equipment, components, information or technology transferred to them pursuant to the Agreement. The Agreement is to be implemented in a manner so as not to hinder or otherwise interfere with any other activities involving the use of nuclear material, non-nuclear material, equipment, components, information or technology

and military nuclear facilities produced, acquired or developed by them independent of the Agreement for their own purposes.

Article 2(3) of the Agreement specifically provides that the Parties may undertake transfers between themselves or their authorized persons of nuclear material, non-nuclear material, equipment, components and information.

Article 3(1) of the Agreement again specifically provides that *information* may be transferred between the Parties, and that such information may cover, but need not be limited to, the following fields:

- Research, development, design, construction, operation, maintenance and use of reactors, reactor experiments, and decommissioning;
- The use of nuclear material in physical, chemical, radiological and biological research, medicine, agriculture and industry;
- Fuel cycle activities to meet future world-wide civil nuclear energy needs, including multilateral approaches to which they are parties for ensuring nuclear fuel supply and appropriate techniques for management of nuclear wastes;
- Advanced research and development in nuclear science and technology;
- Health, safety and environmental considerations related to the foregoing;
- Assessments of the role that nuclear power may play in national energy plans;
- Codes, regulations and standards for the nuclear industry;
- Research on controlled thermonuclear fusion including bilateral activities and contributions toward multilateral projects such as the International Thermonuclear Experimental Reactor (ITER); and
- Any other field mutually agreed by the Parties.

Article 3(2) provides that the above cooperation may include training, exchange of personnel, meetings, exchange of samples, materials and instruments for experimental purposes and a balanced participation in joint studies and projects.

Article 3(3) states that the Agreement does not require the transfer of any information outside the scope of the Agreement, or information that the Parties are not permitted under their respective treaties, national laws or regulations to transfer.

Article 3(4) provides that Restricted Data, as defined by each Party, shall not be transferred under the Agreement.

Article 4(1) provides *inter alia* for the Parties to facilitate nuclear trade between themselves in the mutual interests of their respective industry, utilities and consumers and also, where appropriate, trade between either Party and a third country of items obligated to the other Party.

Article 4(2) provides *inter alia* that authorizations, including export and import licenses as well as authorizations or consents to third parties relating to trade, industrial operations or nuclear material movement, should be consistent with the sound and efficient administration of the Agreement and should not be used to restrict trade.

Article 5(1) provides that nuclear material, non-nuclear material, equipment and components may be transferred for applications consistent with the Agreement. Article 5(3) provides that natural or low enriched uranium may be transferred for use as fuel in reactor experiments and in reactors, for conversion or fabrication, and for other purposes as may be agreed to by the Parties. Article 5(1) provides also that any special fissionable material transferred shall be limited to low enriched uranium, except for "small quantities," which may be transferred pursuant to Article 5(5) for use as samples, standards, detectors and targets, and the accomplishment of other purposes as agreed by the Parties.

Article 5(4) provides that the *quantity* of nuclear material transferred under the Agreement shall be consistent with any of the following purposes: use in reactor experiments or the loading of reactors, the efficient and continuous conduct of such reactor experiments or operation of reactors for their lifetime, use as samples, standards, detectors and targets, and other purposes as the Parties may agree.

Article 5(6) records verbatim certain political assurances relating to reliable supply of nuclear fuel given to India by the United States in March 2006. The Agreement language does not have the effect of converting these political assurances into legally binding commitments because the Agreement, like other U.S. agreements of its type, is intended as a framework agreement that does not compel specific exports.

Articles 5(2), 6-10, and 14 address the specific requirements of section 123a. of the AEA and are discussed in detail in part III below.

Article 11 provides that the Parties shall cooperate in following the best practices for minimizing the impact on the environment from any radioactive, chemical or thermal contamination arising from activities under the Agreement and in related matters of health and safety.

Article 12 contains additional provisions with regard to implementation of activities falling within the scope of the Agreement.

Article 13 provides for consultations at the request of either Party regarding implementation of the Agreement and the development of further cooperation in the field of peaceful uses of nuclear energy on a stable, reliable and predictable basis. It further provides that the Parties shall endeavor to avoid taking any action that adversely affects cooperation under Article 2, which is the general "Scope of Cooperation" Article.

Article 15 provides for dispute settlement through negotiations between the Parties.

Article 16 provides for the Agreement to have an initial duration of 40 years and to continue in force for additional periods of 10 years each, subject to a proviso that either Party may terminate the Agreement by giving written notice to the other Party six months prior to the close of a period. It also provides for continuation in effect of key nonproliferation provisions of the Agreement in the event of its termination.

Article 17 provides for the establishment of agreed-upon procedures to implement the terms of the Agreement.

The statutorily mandated nonproliferation conditions and controls contained in the Agreement are detailed and analyzed in the following section.

III. SUBSTANTIVE CONDITIONS

The proposed Agreement meets the applicable requirements of the Atomic Energy Act and the NNPA. Section 123a. of the Atomic Energy Act sets forth nine specific requirements that must be met in agreements for cooperation. Sections 402 and 407 of the NNPA set forth supplementary requirements. The provisions contained in the proposed Agreement satisfy those requirements as follows:

(1) Application of Safeguards

Section 123a.(1) requires a guaranty from the cooperating party that safeguards as set forth in the agreement for cooperation will be maintained with respect to all nuclear materials and equipment transferred pursuant thereto and with respect to all special nuclear material used in or produced through the use of such transferred nuclear materials and equipment, so long as the material or equipment remains under the jurisdiction or control of the cooperating party, irrespective of the duration of the other provisions in the agreement or whether the agreement is terminated or suspended for any reason.

This requirement is satisfied by Articles 10 and 16(3) of the Agreement. Safeguards are mandated by Article 10(1) on "all nuclear material and equipment transferred pursuant to this Agreement and with respect to special fissionable material used in or produced through the use of such nuclear material and equipment, so long as the material or equipment remains under the jurisdiction or control of the cooperating party." Article 10(2) provides that nuclear material and equipment transferred from the U.S. to India and "any nuclear material used in or produced through the use of nuclear material, non-nuclear material, equipment or components so transferred shall be subject to safeguards *in perpetuity* in accordance with" the India-IAEA safeguards agreement, which was recently approved by the IAEA Board of Governors.

Article 16(3) provides the assurance that, notwithstanding the termination or expiration of the Agreement or the withdrawal of a Party from the Agreement, the safeguards required under Article 10 shall "continue in effect so long as any nuclear material, non-nuclear material, by-product material, equipment or components subject to [Article 10] remains in the territory of the Party concerned or under its jurisdiction or control anywhere, or until such time as the Parties agree

that such nuclear material is no longer usable for any nuclear activity relevant from the point of view of safeguards." In addition, Article 10(4) provides that both countries shall consult regarding appropriate verification measures in the event that the application of IAEA safeguards is no longer possible.

(2) Full-Scope Safeguards

The requirement for full-scope safeguards as a condition of cooperation mandated by section 123a.(2) is to be exempted pursuant to section 104 of the Hyde Act (the Henry J. Hyde United States-India Peaceful Atomic Energy Cooperation Act of 2006, Public Law 109-401).

(3) Peaceful Use

The requirement of section 123a.(3) of the AEA for a guaranty against explosive or military uses of nuclear materials and equipment transferred and special nuclear material produced through the use of such items is met by Article 9 of the Agreement, which provides that:

> Nuclear material, equipment and components transferred pursuant to this Agreement and nuclear material and by-product material used or produced through the use of any nuclear material, equipment, and components so transferred shall not be used by the recipient Party for any nuclear explosive device, for research on or development of any nuclear explosive device or for any military purpose.

(4) Right of Return

Section 123a.(4) of the AEA requires a stipulation that, in the event of a nuclear detonation by a non-nuclear weapon state cooperating party or termination or abrogation of an IAEA safeguards agreement by such a party, the United States shall have a right to the return of any nuclear materials and equipment transferred pursuant to the agreement for cooperation and any special nuclear material produced through the use of such transferred items. This requirement is met by Article 14 of the Agreement, which provides a right of return regarding "any nuclear material, equipment, non-nuclear material or components transferred under this Agreement and any special fissionable material produced through their use" (Article 14(4)). The procedure for exercising this right of return is as follows:

- Pursuant to Article 14(1), either Party has the right to terminate the Agreement on one year's written notice to the other Party;
- The Party seeking termination has the right to cease further cooperation if it determines that "a mutually acceptable resolution of outstanding issues has not been possible or cannot be achieved through consultations" (Article 14(2));
- Either party may exercise the right of return "following the cessation of cooperation" as provided for in Article 14(2) and "on or before the date of termination" as provided for in Article 14(1).

Thus, the right of return provided for in Article 14 of the Agreement fully satisfies the requirements of section 123a.(4) in terms of the items subject to the right of return and the circumstances under which it may be exercised.

(5) Retransfer Consent

Section 123a.(5) of the AEA requires a guaranty by the cooperating party that any material, Restricted Data, and production or utilization facility transferred pursuant to the agreement "or any special nuclear material produced through the use of any such [facility or material] will not be transferred to unauthorized persons or beyond the jurisdiction or control of the cooperating party" without prior U.S. consent. This requirement is met by Article 7(2) of the Agreement. (The transfer of Restricted Data is precluded by Article 3(4) of the Agreement.)

(6) Physical Security

The requirement of section 123a.(6) of the AEA for a guaranty that adequate physical security will be maintained with respect to any nuclear material transferred pursuant to an agreement of cooperation and any special nuclear material used in or produced through the use of nuclear material, production facility or utilization facility transferred pursuant to the agreement is met by Article 8 of the Agreement.

(7) Enrichment/Reprocessing/Alteration Consent Right

Section 123a.(7) of the AEA requires a guaranty that "no material transferred pursuant to the agreement for cooperation and no material used in or produced through the use of any material, production facility, or utilization facility transferred pursuant to the agreement will be reprocessed, enriched or (in the case

of plutonium, uranium 233, or uranium enriched to greater than 20 per cent in the isotope 235, or other nuclear materials which have been irradiated) otherwise altered in form or content without the prior approval of the United States."

In Article 6, the Parties provide mutual consent for enrichment up to 20 percent in the isotope 235 of uranium subject to the Agreement. The Parties also provide mutual consent to reprocessing and alteration in form or content of nuclear material subject to the Agreement, except that to bring this right into effect in the case of India, India must establish a new national reprocessing facility dedicated to reprocessing safeguarded nuclear material under IAEA safeguards *and* both Parties must agree on arrangements and procedures under which the reprocessing or other alteration in form or content will take place in the new facility, including provisions with respect to the application of IAEA safeguards to *all* facilities concerned with these activities, as well as provisions relating to physical protection, storage, environmental protection, and use of any separated special fissionable material only in national facilities under IAEA safeguards. Article 14(9) provides that the above "arrangements and procedures" are subject to suspension by either Party in exceptional circumstances, as defined by the Parties, after consultations as specified in that paragraph. (Since Article 14 is not among those continuing in effect if the Agreement as a whole were to be terminated (Article 16(3)), a Party intending to suspend the "arrangements and procedures" under Article 6 would need to do so prior to termination of the Agreement itself.)

Article 6 also satisfies section 402(a) of the NNPA, which states that, except as specifically provided in any agreement for cooperation, no source or special nuclear material exported from the United States after the date of the NNPA may be enriched after export without the prior approval of the United States for such enrichment.

(8) Storage Consent Right

The requirement of section 123a.(8) of the AEA for a guaranty of a right of prior U.S. approval over facilities for the storage of specified nuclear materials is met by Article 7(1).

(9) Sensitive Nuclear Technology

The requirement of section 123a.(9) pertains to situations that may result when sensitive nuclear technology is transferred pursuant to a section 123

agreement for cooperation. Article 5(2) of the Agreement provides that sensitive nuclear technology shall only be transferred under the Agreement if provided for by an amendment to the Agreement, and Article 5(2) further provides that sensitive nuclear facilities and major critical components thereof shall only be transferred under the Agreement if provided for by an amendment to the Agreement. Accordingly, the requirement in section 123a.(9) is not relevant to the proposed Agreement, and the requirement in section 402(b) of the NNPA precluding the transfer of major critical components of facilities for uranium enrichment, nuclear fuel reprocessing, or heavy water production unless an agreement for cooperation "specifically designates such components as items to be exported pursuant to [such] agreement" is also satisfied.

Environmental: Article 11 of the proposed Agreement provides that the Parties "shall follow the best practices for minimizing the impact on the environment from any radioactive, chemical or thermal contamination arising from peaceful activities under this Agreement," thereby satisfying section 407 of the NNPA.

Proportionality: For the purpose of implementing rights specified in Articles 6 and 7 of the proposed Agreement, "produced" special nuclear material is defined in terms of proportionality in the Agreed Minute to the Agreement. Thus, if U.S. nuclear material is used in a non-U.S. reactor, the special nuclear material produced will be attributed to the U.S. in the proportion of the U.S. nuclear material to the total amount of nuclear material used, and similarly for subsequent generations. It has been our consistent view that sections 123 and 127 of the AEA allow this concept of proportionality to be used in determining the reasonable application of U.S. consent rights. Indeed, all of the agreements negotiated since the enactment of the NNPA in 1978 contain a similar proportionality provision.

The proposed Agreement thus satisfies all the substantive requirements specified for agreements for cooperation by the AEA and the NNPA, with the exception of section 123a.(2), from which it is to be exempted.

IV. OTHER NONPROLIFERATION POLICY ISSUES

1. Safeguards

Full-Scope versus INFCIRC/66 safeguards

A non-nuclear weapons state party to the NPT is required to have in place a "full-scope" safeguards agreement, applicable to all nuclear material and activities in the state. Such an agreement, based on IAEA document INFCIRC/153, has historically been considered the gold standard of safeguards. Such full-scope safeguards, in conjunction with an assessment that a state's political situation was consistent with adherence to nonproliferation norms, was seen as meeting the safeguards standard for the NPAS. More recently, the United States and others have indicated that they consider that the new safeguards standard should be a full-scope safeguards agreement with an Additional Protocol. Whereas the 153-based safeguards agreement focuses on declared material and facilities, the Additional Protocol provides the IAEA with additional information and access, to provide increased assurance of the absence of *undeclared* activities.

For a non-nuclear weapon state party to the NPT, safeguards are required to be able to detect in a timely manner, and thereby deter, the diversion of one weapons-quantity (called by the IAEA a "significant quantity") of nuclear material from declared facilities. Clearly, the diversion of even one weapons-quantity of material by a NNWS NPT party would have very serious implications, both in terms of regional stability and damage to the nonproliferation regime. The IAEA has therefore adopted standards for timeliness of detection consistent with the detection of one weapons-quantity of material within a time approximately equal to that needed to convert that material into weapons-usable form; this was deemed to provide time for political action. There are no such quantitative standards for implementation of the Additional Protocol, as activities related to detecting undeclared activities do not lend themselves to quantification and are somewhat dependent on external sources of information.

Because India is not an NPT signatory, the Indian safeguards agreement is not based on INFCIRC/153, but on another document, INFCIRC/66, discussed further below. The context in which safeguards will be applied in India differs importantly from that of a NNWS NPT signatory. India has already acquired nuclear weapons, has a fully capable nuclear weapons complex, all of the technical expertise necessary to produce weapons-grade materials, and a large stockpile of nuclear material that is outside of the safeguards agreement. The facilities retained by India outside the agreement constitute the full nuclear fuel cycle, including heavy water reactors, advanced reactors, uranium and plutonium fuel fabrication plants, and reprocessing plants.

In short, India's non-civil facilities already include every capability likely to exist among the facilities declared as civil; indeed, it is unlikely that India would chose to offer a facility as civil if it were needed for military purposes. India thus would have no apparent incentive to divert material, equipment, or technology from its declared civil sector to military uses. Its non-civil sector already possesses the necessary capabilities, and a diversion would risk a strong reaction from the U.S. and other nuclear cooperation partners.

India has committed to negotiating an Additional Protocol "with respect to its civilian facilities" with the IAEA. The IAEA's standard "Model Additional Protocol" (INFCIRC/540) was designed as an enhancement of an INFCIRC/153-type safeguards agreement, and to apply to the state as a whole. Thus there are bound to be important differences between the Indian AP and the Model AP. It is not clear yet what the provisions of the Indian AP will be, but it will probably provide some additional information or access to the facilities declared as civil, enhancing somewhat the effectiveness of safeguards at civil facilities. Because India will obviously have undeclared activities that are outside the scope of the safeguards agreement, the primary function of its Additional Protocol will not in general be the same as that of the Model Additional Protocol (that of detecting undeclared nuclear activities).

The safeguards agreement between India and the IAEA is based on INFCIRC/66, the Agency's approved safeguards system for states not party to the NPT. INFCIRC/66 predated the NPT and is entitled "the Agency's Safeguards System." It is not, like INFCIRC/153, a model safeguards agreement, but contains language that 66-based safeguards agreements draw on, either verbatim or by reference. These agreements can be seen as comprising two components.

One component includes the sections on the mechanics of safeguards such as procedures, reports, inspections, exemptions, termination, transfers, and procedures for various facility types. These are generally drawn from INFCIRC/66 itself; this is the case with the Indian agreement. The technical safeguards methods provided for under an INFCIRC/66-based agreement are based on this standard language, and will be no different than those used in other safeguards agreements. We would expect that safeguards would be applied to an Indian heavy water reactor, for example, using the same technology and techniques applied to a heavy water reactor elsewhere. Some states, including Canada and Japan, are under the regime the IAEA calls "integrated safeguards" because they have an Additional Protocol in force, and because the IAEA has drawn a formal conclusion regarding the absence of undeclared activities in those states. Integrated safeguards allow the

IAEA some additional flexibility in its safeguards activities, and some reductions in the intensity of inspections. We do not anticipate that such integrated safeguards would be applicable to India, because the IAEA will not be in a position to draw the relevant conclusion regarding undeclared activities. In particular, safeguards goals for timeliness and significant quantity described above are expected to apply to India, with no reductions in the frequency or extensiveness of inspections.

Safeguards on Facilities

There are also sections in the safeguards agreement identifying the scope of application of safeguards: what items the IAEA will actually inspect. This section is necessarily unique to each INFCIRC/66-based agreement; generally it names specific facilities being offered for safeguards, and describes how safeguards obligations follow material and subsequent generations of material used in or produced by that facility. In the case of the Indian safeguards agreement, no facilities or materials are offered for safeguards initially. The agreement provides that India will place a facility under safeguards in a two-step process:

- First, after entry into force of the agreement, India must "file with the Agency a Declaration, based on its sovereign decision to place voluntarily its civilian nuclear facilities under Agency safeguards in a phased manner" (para. 13); and

- Second, "India, on the basis of its sole determination, shall notify the Agency in writing of its decision to offer for Agency safeguards a facility identified by India in the Declaration referred to in paragraph 13, or any other facility to be determined by India. Any facility so notified by India to the Agency will be included in the Annex" (para. 14).

In the first step, the facilities in the declaration are expected to be those in the Indian Separation Plan, circulated to the IAEA Board of Governors as INFCIRC/731. The Separation Plan indicates that India will identify and offer for safeguards in a phased manner a number of facilities, including 14 power reactors and other facilities listed in the document. The declaration under paragraph 13 does not allow the Agency to start inspections. This can only happen after a subsequent notification under paragraph 14.

Once such a facility is notified and placed in the Annex, safeguards cannot terminate on it without a joint determination by the IAEA and India (para. 32):

"Safeguards shall be terminated on a facility listed in the Annex after India and the Agency have jointly determined that the facility is no longer usable for any nuclear activity relevant from the point of view of safeguards."

Although the safeguards agreement includes preambular language noting India's ability to take "corrective measures" to ensure uninterrupted operation of India reactors, both the U.S. and the IAEA have concluded that the preambular language establishes the historical context of the agreement and does not affect the obligations quoted above, which are contained in the agreement's operational provisions.

The safeguards agreement allows for the possibility that safeguards could be temporarily placed on a facility not on the Annex by virtue of the fact that safeguarded material was placed in the facility (para. 11f). This is foreseen in the Indian separation plan, which indicates that an Indian reprocessing plant could be safeguarded "in campaign mode." The proposed U.S.-India agreement for cooperation stipulates that reprocessing of U.S.-obligated material will take place only in a new reprocessing facility dedicated to processing material under IAEA safeguards, subject to "arrangements and procedures" that must be agreed upon by the United States; such a facility would have to be subject to safeguards in perpetuity. It is U.S. policy not to allow export to facilities temporarily under safeguards.

Safeguards on Material

The safeguards agreement requires safeguards on material as provided for in paragraph 11:

"11. The items subject to this Agreement shall be:
(a) Any facility listed in the Annex to this Agreement ...
(b) Any nuclear material, non-nuclear material, equipment and components supplied to India which are required to be safeguarded pursuant to a bilateral or multilateral arrangement to which India is a party;
(c) Any nuclear material, including subsequent generations of special fissionable material, produced, processed or used in or by the use of a facility listed in the Annex or in or by the use of any nuclear material, non-nuclear material, equipment and components referred to in paragraph 11(b);
...."

As in all safeguards agreements, there is standard termination and suspension language that allows for material to cease being safeguarded under certain conditions; for example, if it has been diluted in a way that makes it no longer usable. The termination provision includes standard language (paragraph 30(d)) that would allow India to remove from safeguards the *Indian indigenous* uranium in spent fuel that had been used to fuel a reactor that was under safeguards in the Annex. In order to do so, India would have to separate out (by reprocessing) the plutonium in the spent fuel, which *would* remain subject to safeguards because it was produced in a reactor listed in the Annex (11(c) above). The uranium remaining after irradiation and reprocessing would be lower in U-235 than the fresh fuel that went into the reactor to begin with, and thus less attractive for any nuclear purpose. It is unlikely that India would go to such extraordinary lengths to remove from safeguards material less attractive than what it voluntarily placed under safeguards in the first place. India's ability to withdraw such material in the situation described is, however, in accordance with Agency standards, principles, and practices.

Other Safeguards Considerations

One difference between a full-scope safeguards agreement under INFCIRC/153 and an INFCIRC/66-based agreement is that substitution of non-subject material for subject material by India is allowed (paras. 11(d), 27, 30(d)), provided the Agency agrees, and provided the amount and quality of the substituted material is at least equivalent to that of the material being substituted for. The obligations on the original material transfer to the substituted material, so there is no net impact from a nonproliferation perspective. Substitution provisions are a standard element of INFCIRC/66 and substitution is widely used in nuclear commerce.

A second difference is that the agreement allows for, but does not require, safeguards on heavy water and pieces of equipment. Such safeguards are not part of INFCIRC/153 safeguards at all; heavy water is not a "nuclear material." They are needed in this safeguards agreement because existing safeguards agreements for facilities in India have such requirements. In addition, this agreement permits, but does not require, these existing safeguards agreements to be suspended in favor of the new agreement.

2. Potential for Increase in Availability of Indian Indigenous Nuclear Material for Military Use as a Result of Transfers to India for Civil Use

It has been suggested that supplying nuclear fuel to India for civil purposes could assist India's nuclear weapon program by allowing India to use more of its limited domestic supply of uranium exclusively for weapon purposes. The Executive Branch has no evidence indicating that India plans to use additional domestic uranium resources in its nuclear weapons program as a consequence of implementing the Civil Nuclear Cooperation Initiative.

Moreover, the amount of fissile material available for potential weapons use is a function not just of the amount of natural uranium available, but also of factors such as overall fuel cycle capabilities, including the capacity to produce plutonium in reactors and to separate the plutonium through reprocessing. In this regard, under the Civil Nuclear Cooperation Initiative several indigenous Indian reactors, which in theory have been available to support military programs, will be placed under safeguards and no longer be available for this purpose.

As previously noted, India has substantial, albeit limited, domestic uranium reserves, estimated by the IAEA to be about 95,000 metric tons[1], a complete functioning fuel cycle, and demonstrated competence with nuclear technologies. Limits on India's capacity to process uranium ore currently constrain domestic uranium production, but new capacity should be on line in the next several years. In short, India is capable of maintaining and expanding its existing nuclear arsenal within the limits of its indigenous resources and capabilities. This will be the situation whether or not India is supplied externally with fuel for civil nuclear power.

Finally, India's stated policies indicate a posture of restraint rather than a Cold War-style, unconstrained build up of its nuclear stockpile and forces. India has long indicated that it seeks a so-called "credible minimum deterrent," and it has articulated a no-first-use policy for nuclear weapons. India has also committed to work with the United States to achieve a multilateral Fissile Material Cut-Off Treaty that would cap material available for weapons. On March 30, 2006, then-Foreign Secretary Saran publicly reiterated that India "remains committed to a credible minimum deterrent. If our posture so far has been one of restraint and responsibility – not disputed even by our critics – there is no reason why we should suddenly change now." The United States will continue to urge India to maintain a posture of strategic restraint and to further strengthen its nonproliferation commitments within the context of the U.S.-India strategic partnership.

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[1] IAEA-TECDOC-1463, Sep 2005. IAEA estimate included uranium in RAR, EAR-I and EAR-II categories.

3. Physical Protection and Safety

India has been a member of the International Convention on the Physical Protection of Nuclear Materials since March 12, 2002; a member of the International Convention on Nuclear Safety since March 31, 2005; and a member of the International Convention on the Suppression of Acts of Nuclear Terrorism since it entered into force on July 7, 2007. It has thus undertaken a legal obligation to adhere to the terms of all three of these conventions. There are no cases known to the Executive Branch of fissile material being lost, diverted, or stolen in India.

4. Previous U.S.-India Peaceful Nuclear Cooperation (Tarapur)

An earlier U.S.-India agreement for peaceful nuclear cooperation, signed at Washington August 8, 1963, entered into force October 25, 1963, and expired by its terms October 25, 1993. Under that agreement, known informally as the "Tarapur Agreement," the United States initially supplied reactor units one and two at India's Tarapur site, together with low enriched uranium (LEU) fuel to operate them. (Whereas other U.S. nuclear cooperation agreements have been "framework" agreements requiring no specific transfers, the Tarapur Agreement required the supply of these items.) U.S. cooperation under the 1963 Agreement became problematic following passage of the 1978 NNPA, which among other things established full-scope IAEA safeguards (FSS) as a requirement for continued U.S. supply of nuclear material to non-nuclear-weapon States. The NNPA provided for certain transitional arrangements for supply to India. Under these, the President in 1980 approved two further transfers of LEU fuel after the NRC determined that it could not make the findings necessary under the AEA to license the exports. One shipment was completed. The second, by mutual agreement of the Administration and Congress, was not sent. To avoid a breach of the Agreement, the United States instead engaged France as a surrogate supplier under the Tarapur Agreement. A decade later, France adopted its own FSS export policy and ended its supply for Tarapur. After expiration of the U.S.-India Agreement for Cooperation in 1993, China (which did not then have an FSS export policy) stepped in as a supplier. Later Russia stepped in as a supplier, invoking a "safety" exception in the NSG Guidelines, despite objections by the United States and most other NSG members. Russian supply is continuing.

The United States maintains, and has formally advised the Indian Government on several occasions, that certain U.S. "vested rights" have survived expiration of the 1963 Agreement, including a U.S. right to approve reprocessing

of the fuel used in Tarapur reactor units one and two. India has consistently disputed the U.S. position, although it did agree "voluntarily" to maintain IAEA safeguards on the two reactors after the 1963 Agreement expired. The proposed new Agreement with India does not apply retroactively to the U.S.-supplied Tarapur reactors or their fuel. However, the Administration regards the current nonproliferation status of the Tarapur reactors and fuel as acceptable and sustainable so long as they remain under safeguards. Moreover, the Government of India has included the Tarapur reactors among the facilities to be safeguarded as part of its "civil" nuclear program; once the reactors are subject to the new safeguards agreement, they cannot be removed from safeguards unless India and the IAEA jointly determine that they are "no longer usable for any nuclear activity relevant from the point of view of safeguards" (India-IAEA Safeguards Agreement, paragraph 31).

V. CONCLUSION

Entry-into-force of the proposed U.S.-India Agreement will put in place a framework for mutually beneficial civil nuclear cooperation between the two countries and provide a foundation for continued collaboration on achieving nuclear non-proliferation goals.

On the basis of the analysis in this NPAS and all pertinent information of which it is aware, the Department of State has arrived at the following assessment, conclusions, views and recommendations:

1. The safeguards and other control mechanisms and the peaceful use assurances in the proposed Agreement are adequate to ensure that any assistance furnished under it will not be used to further any military or nuclear explosive purpose.

2. The Agreement meets all the legal requirements of the AEA and the NNPA, except section 123a.(2) of the AEA, which is to be exempted pursuant to section 104 of the Hyde Act.

3. Execution of the proposed Agreement would be compatible with the non-proliferation program, policy, and objectives of the United States.

4. Therefore, it is recommended that the President determine that the performance of the proposed Agreement will promote, and will not constitute an unreasonable risk to, the common defense and security, that he approve the

Agreement and authorize its execution, and that he submit it to Congress for its approval.

Report Pursuant to Section 104(c) of the Hyde Act Regarding Civil Nuclear Cooperation with India

This report is submitted in accordance with Section 104(c) of the Henry J. Hyde United States-India Peaceful Atomic Energy Cooperation Act of 2006 (Public Law 109-401).

The U.S.-India Civil Nuclear Cooperation Initiative was announced in a Joint Statement by President Bush and Indian Prime Minister Manmohan Singh in Washington on July 18, 2005. On December 18, 2006, the President signed into law the Henry J. Hyde United States-India Peaceful Atomic Energy Cooperation Act of 2006 (the "Hyde Act"), to facilitate peaceful nuclear cooperation with India by authorizing the President to exempt the U.S.-India nuclear cooperation agreement and waive two provisions of the Atomic Energy Act of 1954 ("AEA") based on his determination that certain nonproliferation commitments have been met. Pursuant to Section 104(c) of the Hyde Act, the following report details the basis for the President's determinations and provides a available information on the areas listed in Section 104(c)(2).

Separation Plan and Declaration

Section 104(c)(2)(A) of the Hyde Act requires:

> *"A summary of the plan provided by India to the United States and the IAEA to separate India's civil and military nuclear facilities, materials, and programs, and the declaration made by India to the IAEA identifying India's civil facilities to be placed under IAEA safeguards, including an analysis of the credibility of such plan and declaration, together with copies of the plan and declaration."*

The Government of India first made its Separation Plan public on March 7, 2006 and tabled the Separation Plan in Parliament on May 11. On July 25, 2008, the Government of India transmitted the Separation Plan to the Director General of the IAEA to be distributed "to all Member-States of the Agency." The IAEA circulated the Separation Plan to Members as IAEA document INFCIRC/731.

The Separation Plan includes a list of facilities to be designated as civil, a general description of additional facilities to be designated civil in the future, and a description of India's rationale for civil versus military designations, including a statement that the overarching criterion would be a judgement whether subjecting a facility to IAEA safeguards would adversely impact India's national security. A copy of India's Separation Plan can be found at Tab 1. Designating a facility as civil marks it as not relevant to India's strategic nuclear program. The civil designation also ensures that after separation, these facilities will not be engaged in activities of strategic significance for India's military nuclear program. Facilities located in a larger hub of strategic significance, even if they do not normally engage in activities of strategic significance, will not be designated by India as civil. Also included in the Plan are dates specifying when each of the civil facilities are to be offered for safeguards according to a "phased" timeline.

The Separation Plan notes that "India has decided to place under safeguards all future civilian thermal power reactors and civilian breeder reactors, and the Government of India *retains the sole right to determine such reactors as civil*" (emphasis added). It also clarified that the "phasing of specific thermal power reactors being offered for safeguards would be indicated separately by India." And it explicitly described the distinct steps of (1) "filing a declaration regarding its civilian facilities with the IAEA" and (2) "taking a decision to place voluntarily its civilian facilities under IAEA safeguards." (See paragraph 3 of the Separation Plan)

The United States and other potential suppliers to India have international, and in many cases domestic, legal and policy requirements to ensure that items supplied under their agreements for peaceful nuclear cooperation serve exclusively the civil sector. All reactors supplied by the United States or by India's other international partners, and nuclear material used in such reactors, will be required to be designated as "civil" and subject to IAEA safeguards in perpetuity in accordance with IAEA practices. In addition, nuclear supplier nations will not be able to engage in nuclear cooperation, including fuel supply, with India's current reactors or future indigenous reactors unless they are designated as "civil" and subject to IAEA safeguards in perpetuity.

With these conditions in mind, the Plan's civil designations cover most of India's power reactors, raising the total installed thermal power capacity under safeguards from 19% to 65% by 2014.

India identifies 14 thermal reactors as civil, which according to the March 2006 Separation Plan were scheduled to be offered for safeguards between 2006 and 2014. These include the four existing foreign-supplied reactors (TAPS-1 and -2 (the U.S.-supplied Tarapur reactors), RAPS-1 and -2) and the two foreign-supplied reactors under construction (KK-1 and -2). These also include eight indigenous PHWRs, each with a generating capacity of 220 MWe: RAPS-3, -4, -5 and -6, KAPS-1 and -2, and NAPS-1 and -2. India further notes that safeguards will be applied in a phased manner consistent with its agreement with the IAEA. Eight indigenous PHWRs (TAPS-3 and -4, MAPS-1 and -2, Kaiga-1, -2, -3 and -4) are to remain outside of safeguards.

India opted to continue unsafeguarded operations at its operating fast breeder test reactor and also to exclude its prototype fast breeder reactor from safeguards. The fast breeder program is currently at the research and development stage and will take time to reach an advanced stage of development, according to India. India seeks to ensure that it does not face any external "encumbrances" in this process, and so chooses to exclude them from safeguards at this time. India and the United States would not be able to engage in the type of nuclear fuel cycle cooperation contemplated in the U.S.-India Agreement for Peaceful Nuclear Cooperation with regard to India's breeder reactors until India declared them "civil" and placed them under safeguards.

With regard to future reactors that India may operate, India states that it will place under IAEA safeguards "all future civilian thermal power reactors and civilian breeder reactors," retaining for itself the right to designate such reactors as civilian. While India retains the right to develop indigenous facilities for either civil or military purposes in the future, the United States expects the vast majority of future nuclear program growth to occur in India's civil sector. This expectation is based on discussions with the Government of India as well as India's need to obtain the maximum benefit from international cooperation in order to meet its enduring and expanding energy requirements.

Select research reactors and facilities are also included in the Separation Plan. India will permanently shut down the CIRUS plutonium production reactor in 2010. It will also place the foreign-supplied fuel core from the APSARA reactor under safeguards that year. India has not declared as civil

the Dhruva research reactor, the Advanced Heavy Water Reactor, and activities relating to naval nuclear propulsion at Kalpakkam. India plans to declare as civil nine research facilities: the Tata Institute of Fundamental Research; the Variable Energy Cyclotron Centre; the Saha Institute of Nuclear Physics; the Institute for Plasma Research; the Institute of Mathematics Science; the Institute of Physics; the Tata Memorial Centre; the Board of Radiation and Isotope Technology; and the Harish Chandra Research Institute. India expects these civil facilities to play a "prominent role" in international cooperation. Other Indian nuclear and nuclear-related facilities—such as those in the Bhaba Atomic Research Center (BARC) or in the Indira Gandhi Center for Advanced Research (IGCAR)—were not declared as civil, presumably because they retain a military or strategic role. India has not declared as civil the Dhruva research reactor, the Advanced Heavy Water Reactor, and activities relating to naval nuclear propulsion at Kalpakkam.

The civil facilities covered under India's safeguards agreement also include all upstream and downstream facilities involved in India's civil nuclear fuel cycle. India designates as civil the following specific upstream facilities associated with the Nuclear Fuel Complex: the Uranium Oxide Plant (Block A); both the Palletizing and the Assembly Ceramic Fuel Fabrication Plants (Block A); the Enriched Uranium Oxide Plant; the Enriched Fuel Fabrication Plant; and the Gadolinia Facility. The heavy water production plants at Thal, Tuticorin, and Hazira will also be designated as civil. While India does not consider them as "relevant for safeguards purposes," at a minimum India's Additional Protocol is expected to include them. India decided not to designate for civilian uses three additional heavy water production plants, as well as other select Nuclear Fuel Complex facilities.

India plans to continue the current policy of possible "campaign-mode" safeguards with respect to downstream facilities including the Tarapur Power Reactor Fuel Reprocessing Plant (PREFRE). Moreover, both the Tarapur and Rajasthan "Away from Reactor" spent fuel storage pools will be made available for safeguards. India decided not to declare as civil its other spent fuel reprocessing facilities, as well as its indigenous uranium enrichment capability. Subsequent to India's March 2006 separation plan, the Indian government decided to pursue development of a new civil facility dedicated to reprocessing material under safeguards. Development of this facility (and agreement with the United States on arrangements and

procedures related thereto) will be required to bring into effect U.S. consent to reprocessing, pursuant to Article 6 of the Agreement.

Including upstream and downstream facilities under safeguards greatly enhances the ability to ensure that India is effectively separating its civilian and military facilities and programs, safeguarding the civil nuclear program, equipment, and materials, and that no diversion of international civil nuclear assistance is taking place to further military uses. By including both upstream and downstream facilities, India's Separation Plan covers every stage in the fuel cycle process from conversion and fuel fabrication, through the end of the nuclear fuel cycle into stages including spent fuel storage.

As a whole, the United States assesses India's plan to be credible, transparent, and defensible from a nonproliferation standpoint. When implemented, the total installed nuclear capacity under safeguards will rise from 19 percent today to 65 percent; a percentage that will increase to more than 80 percent as India further expands its civil infrastructure through foreign supply and indigenous development. Based on India's safeguards agreement with the IAEA (discussed below), appropriate safeguards will cover India's civil nuclear fuel cycle and provide strong assurances to supplier states that material and technology provided or generated through civil nuclear cooperation will not be diverted either to the military sphere or for unauthorized purposes. In addition, the total portion of India's spent fuel and plutonium stockpiles under safeguards will increase substantially over time (although the reprocessing consent in Article 6 of the U.S.-India Agreement for Peaceful Nuclear Cooperation, if and when the consent comes into effect, could increase modestly the quantity of separated civil plutonium stored in India).

With respect to India filing a declaration with the IAEA, as previously noted, on July 25, 2008, the Government of India transmitted the Separation Plan to the Director General of the IAEA to be distributed "to all Member-States of the Agency" (and the IAEA circulated the Separation Plan to Members as IAEA document INFCIRC/731). Paragraph 14 of the Separation Plan describes the "civil" elements of India's nuclear program, specifically naming the 14 reactors that will be declared "civil" and establishing a timetable for placing them under safeguards, as well as describing the treatment of other types of facilities (breeder reactors, research reactors, upstream facilities, downstream facilities, and research facilities). In a speech to the Indian Parliament on August 17, 2006, the

Prime Minister confirmed that the "civil" facilities designated in the Separation Plan would be submitted to safeguards in a phased manner. He made similar statements to the Indian Parliament on August 13, 2007, after negotiations were completed on the 123 Agreement. In addition, in introducing the India-IAEA Safeguards Agreement, the Director General of the IAEA specifically referred to the significance of the Separation Plan (which had been recently circulated within the IAEA), noting that it described the facilities envisages as coming under safeguards by 2014.

IAEA Safeguards

Section 104(c)(2)(B) of the Hyde Act requires:

> *"A summary of the agreement that has been entered into between India and the IAEA requiring the application of safeguards in accordance with IAEA practices to India's civil nuclear facilities as declared in the plan described in subparagraph (A), together with a copy of the agreement, and a description of the progress toward its full implementation"*

India and the IAEA negotiated, in early 2008, a safeguards agreement, based on INFCIRC/66, the IAEA's approved safeguards system for states not party to the Treaty on the Non-Proliferation of Nuclear Weapons. A copy of India's safeguards agreement can be found at Tab 2. On August 1, 2008, the IAEA Board of Governors approved this agreement by consensus. Thus all legal steps required prior to signature of the safeguards agreement have been concluded. In his statement to the Board of Governors on August 1, 2008 Director General El Baradei stated:

> "The text before you is an INFCIRC/66-type safeguards agreement based on the Agency's standard safeguards practices and procedures. ... In the case of the draft before you, it is an "umbrella agreement", which provides for any facility notified by India to the Agency in the future to become subject to safeguards. .... The "umbrella" nature of this agreement provides a more efficient mechanism for ensuring that safeguards requirements can be met. It satisfies India's needs while maintaining all the Agency's legal requirements. ... As you can see from *India's Plan*, which has been circulated for

the information of all IAEA Member States, a total of 14 reactors are envisaged to come under Agency safeguards by 2014. As with other safeguards agreements between the Agency and Member States, the agreement is of indefinite duration. There are no conditions for the discontinuation of safeguards other than those provided by the safeguards agreement itself. The termination provisions contained in the agreement are the same as for other 66-type agreements. Naturally - as with all safeguards agreements - this agreement is subject to the general rules of international law. Therefore, the agreement should be read as an integral whole. The preamble provides for contextual background and safeguards are implemented in accordance with the terms of the agreement."

Specifically, paragraph 11 of the safeguards agreement describes the items subject to safeguards:

"11. The items subject to this Agreement shall be:

(a) Any facility listed in the Annex to this Agreement, as notified by India pursuant to paragraph 14(a) of this Agreement;

(b) Any nuclear material, non-nuclear material, equipment and components supplied to India which are required to be safeguarded pursuant to a bilateral or multilateral arrangement to which India is a party;

(c) Any nuclear material, including subsequent generations of special fissionable material, produced, processed or used in or by the use of a facility listed in the Annex or in or by the use of any nuclear material, non-nuclear material, equipment and components referred to in paragraph 11(b);

(d) Any nuclear material substituted in accordance with paragraph 27 or 30(d) of this Agreement for nuclear material referred to in paragraph 11(b) or 11(c) of this Agreement;

(e) Any heavy water substituted in accordance with paragraph 32 of this Agreement for heavy water subject to this Agreement;

(f) Any facility other than a facility identified in paragraph 11(a) above, or any other location in India, while producing, processing, using, fabricating or storing any nuclear material, non-nuclear material, equipment or components referred to in paragraph 11(b). (c), (d), or (e) of this Agreement, as notified by India pursuant to paragraph 14(b() of this Agreement."

Paragraph 14(a) provides that India shall "notify the Agency in writing" of its decision to offer a facility for safeguards, after which that facility is included on the Annex to the safeguards agreement. This step of "notifying" the Agency of a facility offered for safeguards will be preceded by India's filing a "declaration" of civil facilities to be placed under safeguards in a phased manner; this filing will occur upon entry into force of the safeguards agreement.

Once a facility is listed in the Annex, safeguards will continue indefinitely unless "India and the Agency have jointly determined that the facility is no longer usable for any nuclear activity relevant from the point of view of safeguards" (paragraph 32). While there are a number of conditions for the termination of safeguards on materials (e.g., material is diluted to the point where it is no longer usable), these termination conditions, as noted by the El Baradei statement, are in accordance with standard IAEA practices, including INFICIRC/66. Thus, the facilities and materials subject to safeguards as described by paragraph 11 (a)-(c) are under "safeguards in perpetuity in accordance with IAEA standards, principles, and practices."

India has indicated that it will submit facilities to safeguards under the India-IAEA safeguards agreement "as declared in" the Indian Separation Plan. As noted by the IAEA Director General, the "umbrella"-type safeguards agreement is well-suited for placing the facilities identified in the Separation Plan under safeguards in a phased manner. In addition, it is well-suited to adding future indigenous reactors that India may construct for civil purposes, as well as reactors that India may import from international suppliers.

Full implementation of the India-IAEA safeguards agreement will require signature of the agreement by both the IAEA and India. The agreement will enter into force once India informs the IAEA that India's domestic legal requirements for entry into force have been met. The Government of India's cover letter transmitting the Separation Plan to the IAEA contained a statement of its "intention to move forward in accordance with the provisions of the Safeguards Agreement after its entry into force." In the meantime, Indian discussions with the IAEA on implementation of the safeguards agreement are ongoing.

IAEA Additional Protocol

Section 104(c)(2c) of the Hyde Act requires:

> *"A summary of the progress made toward conclusion and implementation of an Additional Protocol between India and the IAEA, including a description of the scope of such Additional Protocol."*

To further strengthen safeguards on India's civil nuclear facilities, consistent with its July 2005 Joint Statement commitment, India is in discussions and working closely with the IAEA to conclude an Additional Protocol that would give the IAEA expanded rights of access and additional information regarding India's civil nuclear facilities, including information on exports and imports of trigger list items. These activities, as well as others required to be reported and made available for access under an Additional Protocol, would not otherwise be subject to safeguards. Entry into force of an India-IAEA Additional Protocol could, therefore, provide even more transparency into India's civil nuclear activities.

Indian External Affairs Minister Pranab Mukherjee noted in his statement of September 5, 2008 that India was "working closely with the IAEA to ensure early conclusion of an Additional Protocol to the Safeguards Agreement." Indian officials have conveyed a letter to IAEA counterparts outlining the contours of a proposed Protocol, and the IAEA is currently reviewing India's proposal. The details included in this letter as well as substantive discussions between Indian officials and the IAEA prompted IAEA Director General Mohammed ElBaradei to conclude on September 10, 2008 that India has made substantial progress toward concluding an Additional Protocol consistent with IAEA principles, practices, and policies

that would apply to India's civil nuclear program. We look forward to conclusion of this Additional Protocol at an early date.

Fissile Material Cut-Off Treaty

Section 104(c)(2)(D) of the Hyde Act requires:

> *"A description of the steps that India is taking to work with the United States for the conclusion of a multilateral treaty banning the production of fissile material for nuclear weapons, including a description of the steps that the United States has taken and will take to encourage India to identify and declare a date by which India would be willing to stop production of fissile material for nuclear weapons unilaterally or pursuant to a multilateral moratorium or treaty."*

In August 2006, Indian Prime Minister Singh told the Indian Parliament that India was willing to join a "non-discriminatory, multilaterally-negotiated and internationally verifiable FMCT... provided its security interests are fully addressed." Following this statement, India has publicly endorsed the negotiation of an FMCT in the Conference on Disarmament (CD) and has worked with the U.S. and its international partners to commence FMCT negotiations in that forum. In a 2007 session of the CD, although India initially posed procedural objections to the proposed Program of Work, which included among other items negotiations on an FMCT, India later dropped this objection and supported the measure after the U.S. decided to join consensus support of the Program. In a 2008 session of the CD, India was also supportive of U.S. efforts to realize an effective Program of Work for the CD; India made several constructive suggestions that were incorporated into the draft program of work presented in that session (CD/1840).

Despite the cooperative working relationship between the U.S., India, and some other countries in the CD, obstacles remain in securing consensus on a Program of Work in the CD that includes negotiations on an FMCT. Nevertheless, the U.S., India, and other like-minded states continue to seek a way forward. The U.S. has now given its support to work plan CD/1840 as the best, albeit not ideal, option available for forward movement on the FMCT.

In the March 2008 session of the CD, India made a statement expressing support for consensus on a program of work that took into account "the interests of all stake-holders." In July 2008, India told the U.S. that it's Ambassador in Geneva would, at a July 29 CD meeting, publicly declare broad support for an FMCT and efforts to reach consensus on a work plan. At that meeting, the Indian Ambassador repeated India's support for consensus on a program of work that takes into account "the interests of all stake-holders." India followed this with a statement in an informal session on July 31, where they reiterated their long-standing support for negotiating an FMCT in the CD.

On September 5, 2008, Indian External Affairs Minister Pranab Mukherjee stated, "We are committed to work with others towards the conclusion of a multilateral Fissile Material Cut-off Treaty in the Conference on Disarmament that is universal, non-discriminatory, and verifiable."

In addition to discussions at the CD on an FMCT, the U.S. remains willing to explore other intermediate options. We continue to encourage an early end to the production of fissile material production for weapons by all states. Toward that end we have urged India as part of our bilateral dialogue to put in place a moratorium on fissile material production, as we have done. India has rejected this notion in favor of working this issue at the CD.

Preventing the Spread of Enrichment and Reprocessing Technology

Section 104(c)(2)(E) of the Hyde Act requires:

> *"A description of the steps India is taking to prevent the spread of nuclear-related technology, including enrichment and reprocessing technology or materials that can be used to acquire a nuclear weapons capability, as well as the support that India is providing to the United States to further United States objectives to restrict the spread of such technology."*

India has a solid nonproliferation record on enrichment and reprocessing (ENR) transfers; we are aware of no Indian transfers of ENR equipment or technologies to another state. India furthermore is supportive of

international efforts to limit their spread to states that do not already posses ENR.

India has been supportive of U.S. efforts to work with other states to develop incentives to encourage states without ENR not to pursue these technologies. One such effort is the IAEA fuel bank initiative. Toward that end, India sent a letter dated 18 August 2008 to IAEA Director General ElBaradei indicating India's interest in participating as a supplier nation in the IAEA's effort to establish international fuel banks. In this letter, Dr. Anil Kakodkar, Chairman of India's Atomic Energy Commission, reaffirmed that "India will refrain from the transfer of enrichment and reprocessing technologies to States that do not have them, and support international efforts to limit their spread."

Indian External Affairs Minister Pranab Mukherjee reiterated that in a September 5, 2008 public statement that:

> "India will not be the source of proliferation of sensitive technologies, including enrichment and reprocessing transfers. We stand for the strengthening of the non-proliferation regime. We support international efforts to limit the spread of ENR equipment or technologies to states that do not have them. We will work together with the international community to advance our common objective of non-proliferation. In this regard, India is interested in participating as a supplier nation, particularly for Thorium-based fuel and in establishment of international fuel banks, which also benefit India."

Export Controls

Section 104(c)(2)(F) of the Hyde Act requires:

> *"A description of the steps that India is taking to secure materials and technology applicable for the development, acquisition, or manufacture of weapons of mass destruction and the means to deliver such weapons through the application of comprehensive export control legislation and regulations, and through harmonization with and adherence to MTCR, NSG, Australia Group, and Wassenaar Arrangement guidelines, compliance with United Nations Security Council Resolution 1540, and participation in the Proliferation Security Initiative"*

India committed under the July 18, 2005 Joint Statement, which launched the Civil Nuclear Cooperation Initiative, to harmonize its export controls with and unilaterally adhere to the Missile Technology Control Regime (MTCR) and NSG Guidelines. Through our various discussions since then, India has assured the United States that it has taken the necessary steps to have in place and fully implement effective and comprehensive export controls to deny unlawful access by states or non-state actors. Moreover, India has given assurances of a high-level political commitment to this effort.

India's June 2005 "Weapons of Mass Destruction (WMD) and their Delivery Systems (Prohibitions of Unlawful Activities) Act" and subsequent implementing regulations bring Indian export controls further in line with widely accepted export control standards for preventing WMD proliferation and are consistent with the kinds of measures that UN Security Council Resolution 1540 requires states to implement. The WMD Act, with its stronger "catch-all" provisions, considerably strengthens the government's regulatory ability to control transfers of otherwise uncontrolled items that could contribute to a WMD or missile program of concern.

To assist India in strengthening its export control system, the U.S. held two rounds of experts-level export control talks with India (October 15-16, 2007 and August 11-12, 2008). During these talks, the U.S. gained greater understanding of India's export control laws and regulations, their history, its Special Chemicals, Organisms, Materials, Equipment, and Technologies (SCOMET) list, and how its controls are implemented and enforced. As a result of our engagement with India on its export control system, India not only provided greater clarity on that system but also took specific steps such as issuing a revised SCOMET notification on September 7, 2007.

With respect to harmonization with the NSG and MTCR, in addition to issuing the revision to the SCOMET list in 2007, India explained how the Government of India sometimes uses broader terms than is utilized in the NSG or MTCR; this is done so as to exercise greater licensing oversight. India further explained that there are no substantial differences between its guidelines and those of the NSG and that the only linguistic differences flow from India's nonparticipation in the NSG. The U.S. assesses that India has harmonized with the MTCR and with the NSG up through the 2005 revisions, and has the means in place to make future updates to its guidelines

and control lists if it chooses to do so. Furthermore, India's SCOMET list already captures some of the follow-on updates to the MTCR. We understand that this harmonization process will continue as an element of India's unilateral adherence to the NSG and MTCR. The Government of India has assured us that it has in place a process to make changes to the SCOMET list. Ongoing review and strengthening of India's export controls is built into the Indian system through regular inter-ministerial working groups as well as the Advisory Committees set up in November 2006 under the WMD Act of 2005.

India stated its adherence to the NSG and its annexes in a letter dated September 8, 2008, to Dr. Mohammed El Baradei, the Director General of the International Atomic Energy Agency. Likewise, India stated its adherence to the MTCR and its annex in a letter dated September, 9, 2008, to Mr. Jacques Audibert, the MTCR Point of Contact in Paris. Taking into account these statements, the U.S. assesses that India has adhered to the guidelines and annexes of the NSG and the MTCR, and has done so in a manner consistent with the procedures and/or practices of those regimes.

As part of our strategic partnership, and in the course of a variety of dialogues, including annual nonproliferation talks, we discuss with India a wide range of nonproliferation and export control-related issues, including harmonization with and adherence to the Australia Group (AG) and Wassenaar Arrangement (WA), endorsement of the Proliferation Security Initiative, and implementation of UN Security Council Resolution 1540. We have discussed areas of differences between the SCOMET list and the AG as well as the process of adherence. With respect to the WA, India is in the process of developing a munitions list, and has welcomed outreach by the WA Chair. Discussions with India regarding PSI are ongoing. Since October 2007, India has attended as observers three PSI exercises and the PSI Fifth Anniversary Workshop for non-PSI partners. With respect to UNSCR 1540, India has submitted to the Committee established by UN Security Council Resolution 1540 its initial report as well as two subsequent reports on steps it has taken to meet its UN Security Council Resolution 1540 obligations, and continues to support the Committee's work.

Dissuading Iran from Acquiring WMD

Section 104(c)(2)(G) of the Hyde Act requires:

"A description and assessment of the specific measures that India has taken to fully and actively participate in United States and international efforts to dissuade, isolate, and, if necessary, sanction and contain Iran for its efforts to acquire weapons of mass destruction, including a nuclear weapons capability and the capability to enrich uranium or reprocess nuclear fuel and the means to deliver weapons of mass destruction."

The Government of India has taken several steps to support the U.S. in this regard and to bring Iran back into compliance with its international obligations, particularly those pertaining to its nuclear weapons program. As a member of the IAEA Board of Governors, India voted in favor of both the resolution that found Iran in noncompliance with its IAEA Safeguards Agreement in September 2005 and the resolution that reported Iran's noncompliance to the UN Security Council in February 2006. Responding to the adoption of three Chapter VII UN Security Council Resolutions (1737 in 2006, 1747 in 2007, and 183 in 2008), India reported that it is fully implementing their provisions, including those related to preventing Iran's acquisition of sensitive technology that could facilitate its uranium enrichment program or any future action to reprocess spent fuel.

India has also maintained a strong public line of support for P5+1 and U.S. diplomatic efforts to resolve international concerns with Iran's nuclear program. Furthermore, India has stressed that it does not favor the emergence of additional nuclear weapons states in the region and that all states must adhere to commitments under international treaties and be transparent in fulfilling these commitments. In this vein, India has called on Iran to cooperate fully with the IAEA on numerous occasions and delivered the same message to the Iranians during bilateral consultations.

Nuclear Suppliers Group Exception

Section 104(c)(2)(H) of the Hyde Act requires:

"A description of the decision of the NSG relating to nuclear cooperation with India, including whether nuclear cooperation by the United States under an agreement for cooperation arranged pursuant to section 123 of the Atomic Energy Act of

1954 (42 U.S.C. 2153) is consistent with the decision, practices, and policies of the NSG.

On September 6, 2008, the Nuclear Suppliers Group approved a policy statement by consensus excepting India from the Group's full-scope safeguards requirement for civil nuclear trade. This decision was made at the second of two Extraordinary Plenary sessions held August 21-22 and September 4-6, 2008. This historic decision by the NSG strengthens global nonproliferation principles while assisting India to meet its energy requirements in an environmentally friendly manner.

This exception involved intense scrutiny and debate by and among participating governments. On September 5, 2008, Indian External Affairs Minister (EAM) Pranab Mukherjee issued the following statement on the Civil Nuclear Cooperation Initiative, which was helpful in garnering additional momentum towards consensus:

Statement by External Affairs Minister of India
Shri Pranab Mukherjee on the Civil Nuclear Initiative
05 September 2008

To reiterate India's stand on disarmament and nonproliferation, EAM has made the following statement:

A Plenary meeting of the Nuclear Suppliers Group to consider an exception for India from its guidelines to allow for full civil nuclear cooperation with India is being held in Vienna from September 4 – 5, 2008.

India has a long-standing and steadfast commitment to universal, non-discriminatory and total elimination of nuclear weapons. The vision of a world free of nuclear weapons which Shri Rajiv Gandhi put before the UN in 1988 still has universal resonance.

We approach our dialogue with the Nuclear Suppliers Group and all its members in a spirit of cooperation that allows for an ongoing frank exchange of views on subjects of mutual interest and concern. Such a dialogue will strengthen our relationship in the years to come.

Our civil nuclear initiative will strengthen the international non-

proliferation regime. India believes that the opening of full civil nuclear cooperation will be good for India and for the world. It will have a profound positive impact on global energy security and international efforts to combat climate change.

India has recently submitted a Working Paper on Nuclear Disarmament to the UN General Assembly, containing initiatives on nuclear disarmament. These include the reaffirmation of the unequivocal commitment of all nuclear weapon States to the goal of complete elimination of nuclear weapons; negotiation of a Convention on the complete prohibition of the use or threat of use of nuclear weapons; and negotiation of a Nuclear Weapons Convention prohibiting the development, production, stockpiling and use of nuclear weapons and on their destruction, leading to the global, non-discriminatory and verifiable elimination of nuclear weapons within a specified timeframe.

We remain committed to a voluntary, unilateral moratorium on nuclear testing. We do not subscribe to any arms race, including a nuclear arms race. We have always tempered the exercise of our strategic autonomy with a sense of global responsibility. We affirm our policy of no-first-use of nuclear weapons.

We are committed to work with others towards the conclusion of a multilateral Fissile Material Cut-off Treaty in the Conference on Disarmament that is universal, non-discriminatory and verifiable.

India has an impeccable non-proliferation record. We have in place an effective and comprehensive system of national export controls, which has been constantly updated to meet the highest international standards. This is manifested in the enactment of the Weapons of Mass Destruction and their Delivery Systems Act in 2005. India has taken the necessary steps to secure nuclear materials and technology through comprehensive export control legislation and through harmonization and committing to adhere to Missile Technology Control Regime and Nuclear Suppliers Group guidelines.

India will not be the source of proliferation of sensitive technologies, including enrichment and reprocessing transfers. We stand for the strengthening of the non-proliferation regime. We support international efforts to limit the spread of ENR equipment or technologies to states that

do not have them. We will work together with the international community to advance our common objective of non-proliferation. In this regard, India is interested in participating as a supplier nation, particularly for Thorium-based fuel and in establishment of international fuel banks, which also benefit India.

India places great value on the role played by the IAEA's nuclear safeguards system. We look forward to working with the IAEA in implementing the India-specific Safeguards Agreement concluded with the IAEA. In keeping with our commitment to sign and adhere to an Additional Protocol with respect to India's civil nuclear facilities, we are working closely with the IAEA to ensure early conclusion of an Additional Protocol to the Safeguards Agreement.

New Delhi
5th September 2008

With these assurances reaffirmed, NSG Participating Governments agreed by consensus on an exception for India on September 6, 2008. This decision is consistent with the cooperation envisioned under the U.S.-India peaceful nuclear cooperation agreement detailed below as well as with NSG practices and policies. This policy decision:

- exempts India from the NSG's full-scope safeguards requirement as a condition for transfer of Trigger List items for peaceful purposes and for use in IAEA safeguarded civil nuclear facilities, provided that the transfer satisfies all other provisions of the NSG Guidelines.

- contains an information exchange clause, which is consistent with current practice of the NSG.

- calls for intensified dialogue between the NSG Chair and India; this dialogue already exists. It is useful for it to be intensified not only as part of this decision, but also given India's decision to adhere to the NSG, which involves remaining abreast of and in line with changes to the NSG list and guidelines.

- addresses the desire expressed by some Participating Governments for an explicit review mechanism and/or for the ability to respond in the

event that India abrogates its commitments, such as a nuclear explosive test or safeguards violation. This ability to consult in response to some problem is already provided for under Paragraph 16 of the Guidelines; any participating government may exercise this ability if they consider circumstances warrant.

- notes that Participating Governments will maintain contact and consult through regular channels to "consider" matters related to this decision consistent with the NSG's existing authority and practice.

- provides for enhanced outreach between India and the NSG Chair following this decision and in light of India's decision to adhere to the NSG. This is consistent with enhanced outreach that we support with all adherents and is especially important in light of the civil nuclear trade with India to result from the NSG's decision.

Envisioned Scope of U.S.-India Peaceful Nuclear Cooperation

Section 104(c)(2i)

> *"A description of the scope of peaceful cooperation envisioned by the United States and India that will be implemented under the agreement for nuclear cooperation, including whether such cooperation will include the provision of enrichment and reprocessing technology."*

Envisioned civil nuclear cooperation with India will include a number of activities, which are described in general terms in the *Proposed Agreement for Cooperation Between the Government of the United States of America and the Government of India Concerning Peaceful Uses of Nuclear Energy* Article 2(2). These activities are to take place in accordance with the provisions of the Agreement and each Party's applicable treaties, national laws, regulations, and license requirements and may include, but are not limited to, the following areas:

- Advanced nuclear energy research and development in areas agreed to by the Parties;
- Nuclear safety matters;

- Facilitation of exchange of scientists for visits, meetings, symposia and collaborative research;
- Full civil nuclear cooperation activities covering nuclear reactors and aspects of the associated nuclear fuel cycle including technology transfer on an industrial or commercial scale between the Parties or authorized persons;
- Development of a strategic reserve to guard against any disruption of supply over the lifetime of India's reactors;
- Advanced research and development in nuclear sciences including biological research, medicine, agriculture and industry, environment and climate change;
- Supply between the Parties, whether for use by or for the benefit of the Parties or third countries, of nuclear material;
- Alteration in form or content of nuclear material as provided for in Article 6 of the Agreement;
- Supply between the Parties of equipment, whether for use by or for the benefit of the Parties or third countries;
- Controlled thermonuclear fusion including in multilateral projects; and
- Other areas of mutual interest as may be agreed by the Parties.

Article 2(3) of the Agreement specifically provides that the Parties may undertake transfers between themselves or their authorized persons of nuclear material, non-nuclear material, equipment, components and information.

In Article 2(4) of the Agreement, the U.S. and India further delimit the scope of cooperation by affirming that the purpose of the Agreement is to provide for peaceful nuclear cooperation and not to affect the unsafeguarded nuclear activities of either Party. Nothing in the Agreement is to be interpreted as affecting the rights of the Parties to use for their own purposes nuclear material, non-nuclear material, equipment, components, information or technology produced, acquired or developed by them independent of any nuclear material, non-nuclear material, equipment, components, information or technology transferred to them pursuant to the Agreement. The Agreement is to be implemented in a manner so as not to hinder or otherwise interfere with any other activities involving the use of nuclear material, non-nuclear material, equipment, components, information or technology and

military nuclear facilities produced, acquired or developed by them independent of the Agreement for their own purposes.

Article 3(1) of the Agreement again specifically provides that *information* may be transferred between the Parties, and that such information may cover, but need not be limited to, the following fields:

- Research, development, design, construction, operation, maintenance and use of reactors, reactor experiments, and decommissioning;
- The use of nuclear material in physical, chemical, radiological and biological research, medicine, agriculture and industry;
- Fuel cycle activities to meet future world-wide civil nuclear energy needs, including multilateral approaches to which they are parties for ensuring nuclear fuel supply and appropriate techniques for management of nuclear wastes;
- Advanced research and development in nuclear science and technology;
- Health, safety and environmental considerations related to the foregoing;
- Assessments of the role that nuclear power may play in national energy plans;
- Codes, regulations and standards for the nuclear industry;
- Research on controlled thermonuclear fusion including bilateral activities and contributions toward multilateral projects such as the International Thermonuclear Experimental Reactor (ITER); and
- Any other field mutually agreed to by the Parties.

Article 3(2) provides that the above cooperation may include training, exchange of personnel, meetings, exchange of samples, materials and instruments for experimental purposes and a balanced participation in joint studies and projects.

Article 3(3) states that the Agreement does not require the transfer of any information outside the scope of the Agreement, or information that the Parties are not permitted under their respective treaties, national laws or regulations to transfer.

Article 3(4) provides that Restricted Data, as defined by each Party, shall not be transferred under the Agreement.

Article 4(1) provides *inter alia* for the Parties to facilitate nuclear trade between themselves in the mutual interests of their respective industry, utilities and consumers and also, where appropriate, trade between either Party and a third country of items obligated to the other Party.

Article 4(2) provides *inter alia* that authorizations, including export and import licenses as well as authorizations or consents to third parties relating to trade, industrial operations or nuclear material movement, should be consistent with the sound and efficient administration of the Agreement and should not be used to restrict trade.

Article 5(1) provides that nuclear material, non-nuclear material, equipment and components may be transferred for applications consistent with the Agreement. However, any special fissionable material transferred shall be limited to low enriched uranium, except for "small quantities," which may be transferred pursuant to Article 5(5) for use as samples, standards, detectors and targets, and the accomplishment of other purposes as agreed by the Parties.

In considering the scope of civil nuclear cooperation with India, the issue of spreading sensitive technologies is often raised. The requirement of section 123a.(9) pertains to situations that may result when sensitive nuclear technology is transferred pursuant to a section 123 agreement for cooperation. Article 5(2) of the Agreement provides that sensitive nuclear technology shall only be transferred under the Agreement if provided for by an amendment to the Agreement, and Article 5(2) further provides that sensitive nuclear facilities and major critical components thereof shall only be transferred under the Agreement if provided for by an amendment to the Agreement. Accordingly, the requirement in section 123a.(9) is not relevant to the proposed Agreement, and the requirement in section 402(b) of the NNPA precluding the transfer of major critical components of facilities for uranium enrichment, nuclear fuel reprocessing, or heavy water production unless an agreement for cooperation "specifically designates such components as items to be exported pursuant to [such] agreement" is also satisfied.

Article 5(4) provides that the *quantity* of nuclear material transferred under the Agreement shall be consistent with any of the following purposes: use in reactor experiments or the loading of reactors, the efficient and

continuous conduct of such reactor experiments or operation of reactors for their lifetime, use as samples, standards, detectors and targets, and other purposes as the Parties may agree.

Article 5(6) records verbatim certain political assurances relating to reliable supply of nuclear fuel given to India by the United States in March 2006. The Agreement language does not have the effect of converting these political assurances into legally binding commitments.

Articles 5(2), 6-10, and 14 address the specific requirements of section 123a. of the Atomic Energy Act of 1954 (AEA).

Article 11 provides that the Parties shall cooperate in following the best practices for minimizing the impact on the environment from any radioactive, chemical or thermal contamination arising from activities under the Agreement and in related matters of health and safety.

Article 12 contains additional provisions with regard to implementation of activities falling within the scope of the Agreement.

Article 13 provides for consultations at the request of either Party regarding implementation of the Agreement and the development of further cooperation in the field of peaceful uses of nuclear energy on a stable, reliable and predictable basis. It further provides that the Parties shall endeavor to avoid taking any action that adversely affects cooperation under Article 2, which is the general "Scope of Cooperation" article.

Article 15 provides for dispute settlement through negotiations between the Parties.

Article 16 provides for the Agreement to have an initial duration of 40 years and to continue in force for additional periods of 10 years each, subject to a proviso that either Party may terminate the Agreement by giving written notice to the other Party six months prior to the close of a period. It also provides for continuation in effect of key nonproliferation provisions of the Agreement in the event of its termination.

Ensuring Cooperation Does Not in Any Way Assist India's Nuclear Weapons Program

Section 104(c)(2)(J) of the Hyde Act requires:

> *"A description of the steps taken to ensure that proposed United States civil nuclear cooperation with India will not in any way assist India's nuclear weapons program."*

As previously described, India has developed a Separation Plan (INFCIR/731) to separate civil and military nuclear facilities. The India-IAEA safeguards agreement, which was unanimously approved by the IAEA Board of Governors on August 1, 2008, establishes procedures for applying safeguards to India's "civil" nuclear facilities in accordance with IAEA standards, principles, and practices. The stated purpose of the safeguards agreement is to ensure that no safeguarded item is "used for the manufacture of any nuclear weapon or to further any other military purpose and that such items are used exclusively for peaceful purposes." To this end, IAEA safeguards are designed to detect and prevent diversion from civil to military facilities, making the conclusion of this safeguards agreement the key to ensuring that civil nuclear cooperation could not be used to advance a nuclear weapons program The U.S. does not in any way support India's nuclear weapons program.

Under the Safeguards Agreement, the IAEA will verify that all of India's current and future civil nuclear facilities and material, as well as certain upstream and downstream facilities, are used only for peaceful purposes. Once a reactor is under IAEA safeguards, those safeguards will remain in place on an unconditional basis until the reactor is jointly determined by the IAEA and India to be no longer usable for nuclear activities relevant from the point of view of safeguards. This Initiative will only allow for nuclear cooperation to proceed with facilities subject to IAEA safeguards, monitoring, and inspections to ensure that the civilian nature of the work therein is not compromised. This also provides an incentive for India to declare any future reactors as civil and thus bring them into this framework of nuclear cooperation; otherwise no foreign material and technology would be available for their construction and operation.

For dual-use nuclear exports administered by the Department of Commerce, there are several ways the U.S. is assured that exports are going to reliable recipients of U.S. origin items and have not been diverted to unauthorized end users or end uses. As part of the license application package, we require certification that the item(s) will not be used in any of

the prohibited activities described in 744.2(a) of the Export Administration Regulations (EAR). Through the licensing process, the intelligence and enforcement communities provide information on the bona fides of prospective end-users. Commerce determines the bona fides of the transaction and suitability of the end-user through the use of pre-license checks. This information is then used to make licensing decisions. As part of the approval process, export licenses normally have conditions attached that prohibit re-export, retransfer, or use in sensitive nuclear, chemical, biological, or missile end uses. We require applicants to inform end-users of the licensing conditions. In addition, the U.S. has an end use assurance letter from the Government of India that commits it to ensure that items are not transferred from or through India for use in prohibited unsafeguarded nuclear, WMD, or WMD delivery programs. Also, through post-shipment verifications, the U.S. visits recipients of U.S.-origin items to ensure that the items have actually been delivered to the authorized ultimate consignee or end-user and those items are being used as stated on the export license application.

The transfer of nuclear fuel technology requires authorization by the Secretary of Energy under Section 57(b) of the Atomic Energy Act of 1954 as amended. The regulations that implement Section 57(b) are found in 10 CFR Part 810, which require that prior to such approval, government-to-government assurances outlining the controls/conditions that will be used for securing this technology must be in place. This includes the requirement that the transfer, anything derived from the transfer, and anything that is produced or modified in a facility constructed as a result of the transfer will be used for peaceful purposes. Further, the United States places additional conditions on an authorization to transfer the technology that limits access and prohibits the retransfer of the technology.

Conclusion

As great progress has been made in bringing the U.S.-India Civil Nuclear Cooperation Initiative to fruition, India has been brought closer to the nonproliferation mainstream. India has completed a Separation Plan, negotiated a safeguards agreement, and made substantial progress towards an Additional Protocol. India has greatly improved its export controls and pledged to maintain the highest international standards on restricting the transfer of sensitive technologies. The U.S.-India bilateral relationship has been revamped and has facilitated cooperation on many key regional and

global issues, such as dissuading Iranian attempts to acquire WMD and completing an FMCT in the CD, and this close cooperation is expected to continue in the future, advancing U.S. strategic interests and increasing U.S. national security. Civil nuclear trade with India will increase global energy security and advance U.S. and Indian economic interests while at the same time strengthening the global nonproliferation regime. In meeting its nonproliferation commitments under the Hyde Act, India has made a great step forward in taking its place as a strategic partner for the U.S. now and in the future.

Attachments:

Tab 1 – India Separation Plan
Tab 2 – Agreement Between the Government of India and the IAEA for the Application of Safeguards to Civilian Nuclear Facilities

Implementation of the India-United States Joint Statement of July 18, 2005: India's Separation Plan

The resumption of full civilian nuclear energy cooperation between India and the United States arose in the context of India's requirement for adequate and affordable energy supplies to sustain its accelerating economic growth rate and as recognition of its growing technological prowess. It was preceded by discussions between the two Governments, particularly between President Bush and Prime Minister Manmohan Singh, of the global energy scenario and the long-term implications of increasing pressure on hydrocarbon resources and rising oil prices. These developments led to the announcement in April 2005 of an Indo-US Energy Dialogue that encompassed the entire spectrum of energy options ranging from oil and gas to coal, alternative fuels and civilian nuclear energy. Through the initiation of a sustained dialogue to address energy security concerns, the two countries sought to promote stable, efficient, predictable and cost effective solutions for India's growing requirements. At the same time, they also agreed on the need to develop and deploy cleaner, more efficient, affordable and diversified energy technologies to deal with the environmental implications of energy consumption. India had developed proven and wide ranging capabilities in the nuclear sector, including over the entire nuclear fuel cycle. It is internationally recognized that India has unique contributions to make to international efforts towards meeting these objectives. India has become a full partner in ITER, with the full support of the US and other partners. India also accepted the US invitation to join the initiative on Clean Development Partnership.

2. Noting the centrality of civilian nuclear energy to the twin challenges of energy security and safeguarding the environment, the two Governments agreed on 18 July 2005 to undertake reciprocal commitments and responsibilities that would create a framework for the resumption of full cooperation in this field. On its part, the United States undertook to:

- ❖ Seek agreement from the Congress to adjust US laws and policies to achieve full civil nuclear energy cooperation.
- ❖ Work with friends and allies to adjust international regimes to enable full civil nuclear energy cooperation and trade with

India, including but not limited to expeditious consideration of fuel supplies for safeguarded nuclear reactors at Tarapur.

- ❖ In the meantime, encourage its partners to consider fuel supply to Tarapur
- ❖ expeditiously.
- ❖ To consult with its partners to consider India's participation in ITER.
- ❖ To consult with other participants in the Generation IV International Forum with a view towards India's inclusion.

3. India had conveyed its readiness to assume the same responsibilities and practices and acquire the same benefits and advantages as other leading countries with advanced nuclear technology, such as the United States. Accordingly, India for its part undertook the following commitments:

- ❖ Identifying and separating civilian and military nuclear facilities and programmes in a phased manner.
- ❖ Filing a declaration regarding its civilian facilities with the IAEA.
- ❖ Taking a decision to place voluntarily its civilian nuclear facilities under IAEA safeguards, and
- ❖ Signing and adhering to an Additional Protocol with respect to civilian nuclear facilities.

4. Other commitments undertaken by India have already been fulfilled in the last year. Among them are:

- ❖ India's responsible non-proliferation record, recognized by the US, continues and is reflected in its policies and actions.
- ❖ The harmonization of India's export controls with NSG and MTCR Guidelines even though India is not a member of either group. These guidelines and control lists have been notified and are being implemented.
- ❖ A significant upgrading of India's non-proliferation regulations and export controls has taken place as a result of Weapons of Mass Destruction Act of May 2005. Inter-Ministerial consultations are ongoing to examine and amend other relevant Acts as well as framing appropriate rules and regulations.
- ❖ Refrain from transfer of enrichment and reprocessing technologies to states that do not have them and supporting international efforts to limit their spread. This has guided our policy on non-proliferation.

- ❖ Continued unilateral moratorium on nuclear testing, and
- ❖ Willingness to work with the United States for the conclusion of a multilateral Fissile Material Cut-Off Treaty.

5. The Joint Statement of 18 July 2005, recognized that India is ready to assume the same responsibilities and practices as other leading countries with advanced nuclear technology, such as the United States. India has an impeccable record in nonproliferation. The Joint Statement acknowledges that India's nuclear programme has both a military and a civilian component. Both sides had agreed that the purpose was not to constrain India's strategic programme but to enable resumption of full civil nuclear energy cooperation in order to enhance global energy and environmental security. Such cooperation was predicated on the assumption that any international civil nuclear energy cooperation (including by the US) offered to India in the civilian sector should, firstly, not be diverted away from civilian purposes, and secondly, should not be transferred from India to third countries without safeguards. These concepts will be reflected in the Safeguards Agreement to be negotiated by India with IAEA.

6. India's nuclear programme is unique as it is the only state with nuclear weapons not to have begun with a dedicated military programme. It must be appreciated that the strategic programme is an offshoot of research on nuclear power programme and consequently, it is embedded in a larger undifferentiated programme. Identification of purely civilian facilities and programmes that have no strategic implications poses a particular challenge. Therefore, facilities identified as civilian in the Separation Plan will be offered for safeguards in phases to be decided by India. The nature of the facility concerned, the activities undertaken in it, the national security significance of materials and the location of the facilities are factors taken into account in undertaking the separation process. This is solely an Indian determination.

7. The nuclear establishment in India not only built nuclear reactors but promoted the growth of a national industrial infrastructure. Nuclear power generation was envisaged as a three-stage programme with PHWRs chosen for deployment in the first stage. As indigenous reactors were set up, several innovative design improvements were carried out based on Indian R&D and a

standardized design was evolved. The research and technology development spanned the entire spectrum of the nuclear fuel cycle including the front end and the back end. Success in the technologies for the back end of the fuel cycle allowed us to launch the second stage of the programme by constructing a Fast Breeder Test Reactor. This reactor has operated for 20 years based on a unique carbide fuel and has achieved all technology objectives. We have now proceeded further and are constructing a 500 MWe Prototype Fast Breeder Reactor. Simultaneously, we have launched design and development of reactors aimed at thorium utilization and incorporating inherent safety features.

8. Concepts such as grid connectivity are not relevant to the separation exercise. Issues related to fuel resource sustainability, technical design and economic viability, as well as smooth operation of reactors are relevant factors. This would necessitate grid connectivity irrespective of whether the reactor concerned is civilian or not civilian.

9. It must be recognized that the Indian nuclear programme still has a relatively narrow base and cannot be expected to adopt solutions that might be deemed viable by much larger programmes. A comparison of the number of reactors and the total installed capacity between India and the P-5 brings this out graphically:

Country	**Number of Reactors**	**Total Installed Capacity**
India	15	3.04 GWe (2.8% of thetotal production)
USA	104 (103 operational)	99.21 GWe (19.9% of thetotal production)
France	59	63.36 GWe (78.1% of thetotal production)
UK	23	11.85 GWe (19.4% of the total production)
Russia	31	21.74 GWe (15.6% of the total production)
China	9	6.602 GWe (2.2% of the total production)

Source: Nuclear Energy Institute, Washington DC

10. Another factor to be taken into account is the small capacity of the reactors produced indigenously by India, some of which would remain outside safeguards. Therefore, in assessing the extent of safeguards coverage, it would be important to look at both

the number of reactors and the percentage of installed capacity covered. An average Indian reactor is of 220 MW and its output is significantly smaller than the standard reactor in a P-5 economy. The chart below illustrates this aspect:

Country	**Most Common reactor**	**Number of such reactors**
India	PHWRs 220 MWe	12
USA	69 PWRs and 34 BWRs.	Most plants are in the range of 1000-1250 MWe 51 Reactors in the range of 1000 MWe to 1250 MWe
France	PWRs of 900 MWe and 1300 MWe size	34 PWRs of 900 MWe and 20 PWRs of 1300 MWe
UK	No standard size. AGR is the most common in the range of 600-700 MWe	14 AGRs
Russia	3rd Generation VVER-1000 PWRs and RBMK 1000 Light Water Graphite Reactors	9 third Generation VVER1000 PWRs and 11 RBMK 1000 Light Water Graphite Reactors
China	PWRs 984 MWe	Four

Source: Uranium Information Centre, Melbourne

11. The complexity of the separation process is further enhanced by the limited resources that India has devoted to its nuclear programme as compared to P-5 nations. Moreover, as India expands international cooperation, the percentage of its thermal power reactor installed capacity under safeguards would rise significantly as fresh capacity is added through such cooperation.

12. India's approach to the separation of its civilian nuclear facilities is guided by the following principles:

- ❖ Credible, feasible, and implementable in a transparent manner;
- ❖ Consistent with the understandings of the 18 July Statement;
- ❖ Consistent with India's national security and R&D requirements as well as not prejudicial to the three-stage nuclear programme in India;
- ❖ Must be cost effective in its implementation; and
- ❖ Must be acceptable to Parliament and public opinion.

13. Based on these principles, India will:

- ❖ Include in the civilian list only those facilities offered for safeguards that, after separation, will no longer be engaged in activities of strategic significance.
- ❖ The overarching criterion would be a judgement whether subjecting a facility to IAEA safeguards would impact adversely on India's national security.
- ❖ However, a facility will be excluded from the civilian list if it is located in a larger hub of strategic significance, notwithstanding the fact that it may not be normally engaged in activities of strategic significance.
- ❖ A civilian facility would therefore, be one that India has determined not to be relevant to its strategic programme.

14. Taking the above into account, India, on the basis of reciprocal actions by the US, will adopt the following approach:

i) **Thermal Power Reactors**: India will identify and offer for safeguards 14 thermal power reactors between 2006 and 2014. This will include the 4 presently safeguarded reactors (TAPS 1&2, RAPS 1&2) and in addition KK 1&2 that are under construction. 8 other PHWRs, each of a capacity of 220MWe, will be offered. The overall plan will be as follows:

S.No.	Facility	Year offered for safeguards
1.	TAPS 1	2006
2.	TAPS 2	2006
3.	RAPS 1	2006
4.	RAPS 2	2006
5.	KK 1	2006
6.	KK 2	2006
7.	RAPS 5	2007
8.	RAPS 6	2008
9.	RAPS 3	2010
10.	RAPS 4	2010
11.	KAPS 1	2012
12.	KAPS 2	2012
13.	NAPS 1	2014
14.	NAPS 2	2014

The above offer would, in effect, cover 14 out of the 22 thermal power reactors in operation or currently under construction to be placed under safeguards, and would raise the total installed Thermal Power capacity by MWe under safeguards from the present 19% to 65% by 2014.

ii) **Fast Breeder Reactors**: India is not in a position to accept safeguards on the Prototype Fast Breeder Reactors (PFBR) and the Fast Breeder Test Reactor (FBTR), both located at Kalpakkam. The Fast Breeder Programme is at the R&D stage and its technology will take time to mature and reach an advanced stage of development.

iii) **Future Reactors**: India has decided to place under safeguards all future civilian thermal power reactors and civilian breeder reactors, and the Government of India retains the sole right to determine such reactors as civilian.

iv) **Research Reactors**: India will permanently shut down the CIRUS reactor, in 2010. It will also be prepared to shift the fuel core of the APSARA reactor that was purchased from France outside BARC and make the fuel core available to be placed under safeguards in 2010.

v) **Upstream facilities**: The following upstream facilities would be identified and separated as civilian:

- List of specific facilities in the Nuclear Fuel Complex, Hyderabad which will be offered for safeguards by 2008 is give below:

  - Uranium Oxide Plant (Block A)
  - Ceramic Fuel Fabrication Plant (Palletizing) (Block A)
  - Ceramic Fuel Fabrication Plant (Assembly) (Block A)
  - Enriched Uranium Oxide Plant
  - Enriched Fuel Fabrication Plant
  - Gadolinia Facility

- The Heavy Water Production plants at Thal, Tuticorin and Hazira are proposed to be designated for civilian use between 2006-2009. We do not consider these plants as relevant for safeguards purposes.

vi) **Downstream facilities**: The following downstream facilities would be identified and separated as civilian:

- ❖ India is willing to accept safeguards in the 'campaign' mode after 2010 in respect of the Tarapur Power Reactor Fuel Reprocessing Plant.

- ❖ The Tarapur and Rajasthan 'Away From Reactors' spent fuel storage pools would be made available for safeguards with appropriate phasing between2006-2009.

vii) **Research Facilities**: India will declare the following facilities as civilian:

(a) Tata Institute of Fundamental research
(b) Variable Energy Cyclotron Centre
(c) Saha Institute of Nuclear Physics
(d) Institute for Plasma Research
(e) Institute of Mathematics Science
(f) Institute of Physics
(g) Tata Memorial Centre
(h) Board of Radiation and Isotope Technology
(i) Harish Chandra Research Institute

These facilities are safeguards-irrelevant. It is our expectation that they will play a prominent role in international cooperation.

15. **Safeguards**:

a) The United States has conveyed its commitment to the reliable supply of fuel to India. Consistent with the July 18, 2005, Joint Statement, the United States has also reaffirmed its assurance to create the necessary conditions for India to have assured and full access to fuel for its reactors. As part of its implementation of the July 18, 2005, Joint Statement the United States is committed to seeking agreement from the U.S. Congress to amend its domestic laws and to work with friends and allies to adjust the practices of the Nuclear Suppliers Group to create the necessary conditions for India to obtain full access to the international fuel market, including reliable, uninterrupted and continual access to fuel supplies from firms in several nations.

b) To further guard against any disruption of fuel supplies, the United States is prepared to take the following additional steps:

i) The United States is willing to incorporate assurances regarding fuel supply in the bilateral U.S.-India agreement on peaceful uses of nuclear energy under Section 123 of the U.S. Atomic Energy Act, which would be submitted to the U.S. Congress.

ii) The United States will join India in seeking to negotiate with the IAEA an India-specific fuel supply agreement.

iii) The United States will support an Indian effort to develop a strategic reserve of nuclear fuel to guard against any disruption of supply over the lifetime of India's reactors.

iv) If despite these arrangements, a disruption of fuel supplies to India occurs, the United States and India would jointly convene a group of friendly supplier countries to include countries such as Russia, France and the United Kingdom to pursue such measures as would restore fuel supply to India.

c) In light of the above understandings with the United States, an India-specific safeguards agreement will be negotiated between India and the IAEA providing for safeguards to guard against withdrawal of safeguarded nuclear material from civilian use at any time as well as providing for corrective measures that India may take to ensure uninterrupted operation of its civilian nuclear reactors in the event of disruption of foreign fuel supplies. Taking this into account, India will place its civilian nuclear facilities under India-specific safeguards in perpetuity and negotiate an appropriate safeguards agreement to this end with the IAEA.

16. This plan is in conformity with the commitments made to Parliament by the Government.

{Tabled in Parliament on May 11, 2006}

7 July 2008

AGREEMENT BETWEEN THE GOVERNMENT OF INDIA AND THE INTERNATIONAL ATOMIC ENERGY AGENCY FOR THE APPLICATION OF SAFEGUARDS TO CIVILIAN NUCLEAR FACILITIES

RECOGNIZING the significance India attaches to civilian nuclear energy as an efficient, clean and sustainable energy source for meeting global energy demand, in particular for meeting India's growing energy needs;

WHEREAS India is committed to the full development of its national three-stage nuclear programme to meet the twin challenges of energy security and protection of the environment;

WHEREAS India has a sovereign and inalienable right to carry out nuclear research and development activities for the welfare of its people and other peaceful purposes;

WHEREAS India, a State with advanced nuclear technology, wishes to expand civil nuclear cooperation for its national development;

WHEREAS India is desirous of further expanding cooperation with the International Atomic Energy Agency (hereinafter referred to as "the Agency") and its Member States with the

objective of the full development and use of nuclear energy for peaceful purposes, on a stable, reliable and predictable basis;

WHEREAS India supports the role of the Agency in the promotion of the safe and peaceful uses of nuclear energy as set forth in the Statute of the Agency (hereinafter referred to as the "Statute");

WHEREAS India and the Agency have long standing cooperation in various aspects of the Agency's activities;

RECOGNIZING that such cooperation between India and the Agency must be carried out with full respect for the objectives of the Statute and with due observance of the sovereign rights of India;

WHEREAS the Statute authorizes the Agency to apply safeguards, at the request of the parties, to any bilateral or multilateral arrangement, or at the request of a State to any of the State's activities in the field of atomic energy and, in this context:

Noting the relevance for this Agreement of the understandings between India and the United States of America expressed in the India-U.S. Joint Statement of 18 July 2005, in which India, inter alia, has stated its willingness:

- to identify and separate its civilian and military nuclear facilities and programmes in a phased manner;
- to file with the Agency a declaration regarding its civilian nuclear facilities (hereinafter referred to as "the Declaration");
- to take a decision to place voluntarily its civilian nuclear facilities under Agency safeguards;

Noting also for the purposes of this Agreement that:

- India will place its civilian nuclear facilities under Agency safeguards so as to facilitate full civil nuclear cooperation between India and Member States of the Agency and to provide assurance against withdrawal of safeguarded nuclear material from civilian use at any time;
- An essential basis of India's concurrence to accept Agency safeguards under an India-specific safeguards agreement (hereinafter referred to as "this Agreement") is the conclusion of international cooperation arrangements creating the necessary conditions for India to obtain access to the international fuel market, including reliable, uninterrupted and continuous access to fuel supplies from companies in several nations, as well as support for an Indian effort to develop a strategic reserve of nuclear fuel to guard against any disruption of supply over the lifetime of India's reactors; and
- India may take corrective measures to ensure uninterrupted operation of its civilian nuclear reactors in the event of disruption of foreign fuel supplies;

WHEREAS India is desirous of expanding civil nuclear cooperation with other Member States of the Agency;

WHEREAS the conclusion of this Agreement is intended to facilitate the broadest possible cooperation between India and Member States of the Agency in the peaceful uses of nuclear energy and ensure international participation in the further development of India's civilian nuclear programme on a sustained and long-term basis;

RECALLING that the Agency in accordance with its Statute and safeguards system must take into account, in the implementation of safeguards in India, the need to avoid hampering the peaceful uses of nuclear energy, economic and technological development or international cooperation in the field of peaceful uses of nuclear energy; respect health, safety and physical protection and related security provisions in force in India; and take every precaution to protect commercial, technological and industrial secrets as well as other confidential information coming to its knowledge;

WHEREAS the frequency and intensity of activities described in this Agreement shall be kept to the minimum consistent with the objective of effective and efficient Agency safeguards;

WHEREAS India has requested the Agency to apply safeguards with respect to items subject to this Agreement;

WHEREAS the Board of Governors of the Agency (hereinafter referred to as the "Board") acceded to that request on .....;

NOW THEREFORE, taking into account the above, India and the Agency have agreed as follows:

I.GENERAL CONSIDERATIONS

A. BASIC UNDERTAKINGS

1. India undertakes that none of the items subject to this Agreement, as defined in paragraph 11, shall be used for the manufacture of any nuclear weapon or to further any other military purpose and that such items shall be used exclusively for peaceful purposes and shall not be used for the manufacture of any nuclear explosive device.

2. The Agency undertakes to apply safeguards, in accordance with the terms of this Agreement, to the items subject to this Agreement, as defined in paragraph 11, so as to ensure, as far as it is able, that no such item is used for the manufacture of any nuclear weapon or to further any other military purpose and that such items are used exclusively for peaceful purposes and not for the manufacture of any nuclear explosive device.

B. GENERAL PRINCIPLES

3. The purpose of safeguards under this Agreement is to guard against withdrawal of safeguarded nuclear material from civilian use at any time.

4. The application of safeguards under this Agreement is intended to facilitate implementation of relevant bilateral or multilateral arrangements to which India is a party, which are essential to the accomplishment of the objective of this Agreement.

5. Bearing in mind Article II of the Statute, the Agency shall implement safeguards in a manner designed to avoid hampering India's economic or technological development, and not to hinder or otherwise interfere with any activities involving the use by India of nuclear material, non-nuclear material, equipment, components, information or technology produced, acquired or developed by India independent of this Agreement for its own purposes.

6. The safeguards procedures set forth in this document shall be implemented in a manner designed to be consistent with prudent management practices required for the economic and safe conduct of nuclear activities.

7. In implementing safeguards, the Agency shall take every precaution to protect commercial and industrial secrets. No member of the Agency's staff shall disclose, except to the Director General and to such other members of the staff as the Director General may authorize to have such information by reason of their official duties in connection with safeguards, any commercial or industrial secret or any other confidential information coming to his knowledge by reason of the implementation of safeguards by the Agency.

8. The Agency shall not publish or communicate to any State, organization or person any information obtained by it in connection with the implementation of safeguards in India, except that:

   (a) Specific information relating to such implementation in India may be given to the Board and to such Agency staff members as require such knowledge by reason of their official duties in connection with safeguards, but only to the extent necessary for the Agency to fulfil its safeguards responsibilities;

   (b) Summarized lists of items being safeguarded by the Agency may be published upon decision of the Board; and

   (c) Additional information may be published upon decision of the Board and if all States directly concerned agree.

9. In the light of Article XII.A.5 of the Statute, safeguards shall continue with respect to produced special fissionable material and to any materials substituted therefor.

10. Nothing in this Agreement shall affect other rights and obligations of India under international law.

II. CIRCUMSTANCES REQUIRING SAFEGUARDS

A. ITEMS SUBJECT TO THIS AGREEMENT

11. The items subject to this Agreement shall be:

   (a) Any facility listed in the Annex to this Agreement, as notified by India pursuant to paragraph 14(a) of this Agreement;

   (b) Any nuclear material, non-nuclear material, equipment and components supplied to India which are required to be safeguarded pursuant to a bilateral or multilateral arrangement to which India is a party;

(c) Any nuclear material, including subsequent generations of special fissionable material, produced, processed or used in or by the use of a facility listed in the Annex or in or by the use of any nuclear material, non-nuclear material, equipment and components referred to in paragraph 11(b);

(d) Any nuclear material substituted in accordance with paragraph 27 or 30(d) of this Agreement for nuclear material referred to in paragraph 11(b) or 11(c) of this Agreement;

(e) Any heavy water substituted in accordance with paragraph 32 of this Agreement for heavy water subject to this Agreement;

(f) Any facility other than a facility identified in paragraph 11(a) above, or any other location in India, while producing, processing, using, fabricating or storing any nuclear material, non-nuclear material, equipment or components referred to in paragraph 11(b), (c), (d) or (e) of this Agreement, as notified by India pursuant to paragraph 14(b) of this Agreement.

12. The scope of this Agreement is limited to the items subject to this Agreement as defined in paragraph 11 above.

Declaration

13. Upon entry into force of this Agreement, and a determination by India that all conditions conducive to the accomplishment of the objective of this Agreement are in place, India shall file with the Agency a Declaration, based on its sovereign decision to place voluntarily its civilian nuclear facilities under Agency safeguards in a phased manner.

Notifications

14.

(a) India, on the basis of its sole determination, shall notify the Agency in writing of its decision to offer for Agency safeguards a facility identified by India in the Declaration referred to in paragraph 13, or any other facility to be determined by India. Any facility so notified by India to the Agency will be included in the Annex, and become subject to this Agreement, as of the date of receipt by the Agency of such written notification from India.

(b) Should India, on the basis of its sole determination, decide to import or transfer any nuclear material, non-nuclear material, equipment or components subject to this Agreement to any facility or other location in India provided for in paragraph 11(f) of this Agreement, it shall so notify the Agency. Any such facility or location so notified by India pursuant to this sub-paragraph shall become subject to this Agreement as of the date of receipt by the Agency of such written notification from India.

15. India shall notify the Agency of the receipt of any nuclear material, non-nuclear material, equipment and components referred to in paragraph 11(b) of this Agreement within four weeks of the arrival in India of such nuclear material, non-nuclear material, equipment and components.

Provision of Information to the Agency

16. In the event that India's notification pursuant to paragraph 14(a) of this Agreement relates to a facility subject to Agency safeguards under another Safeguards Agreement or Agreements in India at the time of entry into force of this Agreement, India shall provide the Agency, along with the relevant notification, such information as is required pursuant to the other Safeguards Agreement or Agreements as relates to any nuclear material, non-nuclear material, equipment and components subject to safeguards thereunder.

17. With respect to any other facility listed in the Annex pursuant to paragraph 14(a) of this Agreement, India shall provide the Agency, within four weeks of the relevant notification, with:

    (a) a list of all nuclear material at each such facility; and

    (b) where relevant, and if required pursuant to a bilateral or multilateral arrangement to which India is party, information relating to:

        (i) Any nuclear material, non-nuclear material, equipment and components supplied to India for production , processing, storage or use in such facility;

        (ii) Any nuclear material, including subsequent generations of special fissionable material, produced, processed or used in or by the use of such facility or in or by the use of any nuclear material, non-nuclear material, equipment and components supplied to India for production, processing or use in such facility.

18. Each notification pursuant to paragraph 15 of the Agreement shall include all information relevant to the nuclear material, non-nuclear material, equipment and components so notified, including the facility or location where the nuclear material, non-nuclear material, equipment and components so notified will be received.

19. The information provided by India pursuant to paragraphs 16, 17 and 18 of this Agreement shall specify, inter alia, to the extent relevant, the nuclear and chemical composition, physical form and quantity of the nuclear material; the date of shipment; the date of receipt; the identity of the consigner and the consignee; and any other relevant information, such as the type and capacity of any facility (or parts thereof), components or equipment; and the type and quantity of non-nuclear material. In the case of a facility or other location subject to this Agreement, the information to be provided shall include the type and capacity of that facility or location, and any other relevant information.

20. India shall thereafter notify the Agency by means of reports, in accordance with this Agreement, of any nuclear material, non-nuclear material, equipment and components referred to in paragraph 11(b), (c), (d) or (e) of this Agreement. The Agency may verify the calculations of the amounts and/or quantities of such nuclear material, non-nuclear material, equipment and components, and appropriate adjustments shall be made by agreement between India and the Agency.

21. The Agency shall maintain an inventory of items subject to this Agreement. The Agency shall send a copy of the inventory it maintains with respect to such information to India every twelve months and also at any other times specified by India in a request communicated to the Agency at least two weeks in advance.

B. SAFEGUARDS UNDER OTHER AGREEMENTS

22. The application of Agency safeguards under other Safeguards Agreements concluded by India with the Agency and in force at the time of entry into force of this Agreement may, subject to agreement by the Parties to such other Safeguards Agreements and following notification by India of the relevant facilities pursuant to paragraph 14(a), be suspended while this Agreement is in force. The application of safeguards under this Agreement to nuclear material, non-nuclear material, equipment or components subject to safeguards under such other Agreements shall commence as of the date of receipt by the Agency of India's notification. India's undertaking not to use items subject thereto in such a way as to further any military purpose, and its undertaking that such items shall be used exclusively for peaceful purposes and shall not be used for the manufacture of any nuclear explosive device, shall continue to apply.

C. EXEMPTIONS FROM SAFEGUARDS

General Exemptions

23. Nuclear material that would otherwise be subject to safeguards shall be exempted from safeguards at the request of India, provided that the material so exempted in India may not at any time exceed:

    (a) 1 kilogram in total of special fissionable material, which may consist of one or more of the following:

        (i) Plutonium;

        (ii) Uranium with an enrichment of 0.2 (20 %) and above, taken account of by multiplying its weight by its enrichment;

        (iii) Uranium with an enrichment below 0.2 (20 %) and above that of natural uranium, taken account of by multiplying its weight by five times the square of its enrichment;

    (b) 10 metric tons in total of natural uranium and depleted uranium with an enrichment above 0.005 (0.5 %);

    (c) 20 metric tons of depleted uranium with an enrichment of 0.005 (0.5 %) or below; and

    (d) 20 metric tons of thorium.

Exemptions Related to Reactors

24. Produced or used nuclear material that would otherwise be subject to safeguards because it is being or has been produced, processed or used in a reactor which has been supplied wholly or substantially under a project agreement, submitted to safeguards under a safeguards agreement by the parties to a bilateral or multilateral arrangement or unilaterally submitted to safeguards under a safeguards agreement; or because it is being or has been produced in or by the use of safeguarded nuclear material, shall be exempted from safeguards if:

    (a) It is plutonium produced in the fuel of a reactor whose rate of production does not exceed 100 grams of plutonium per year; or

(b) It is produced in a reactor determined by the Agency to have a maximum calculated power for continuous operation of less than 3 thermal megawatts, or is used in such a reactor and would not be subject to safeguards except for such use, provided that the total power of the reactors with respect to which these exemptions apply in any State may not exceed 6 thermal megawatts.

25. Produced special fissionable material that would otherwise be subject to safeguards only because it has been produced in or by the use of safeguarded nuclear material shall in part be exempted from safeguards if it is produced in a reactor in which the ratio of fissionable isotopes within safeguarded nuclear material to all fissionable isotopes is less than 0.3 (calculated each time any change is made in the loading of the reactor and assumed to be maintained until the next such change). Such fraction of the produced material as corresponds to the calculated ratio shall be subject to safeguards.

D. SUSPENSION OF SAFEGUARDS

26. Safeguards with respect to nuclear material may be suspended while the material is transferred, under an arrangement or agreement approved by the Agency, for the purpose of processing, reprocessing, testing, research or development, within India or to any other Member State or to an international organization, provided that the quantities of nuclear material with respect to which safeguards are thus suspended in India may not at any time exceed:

(a) 1 effective kilogram of special fissionable material;

(b) 10 metric tons in total of natural uranium and depleted uranium with an enrichment 0.005 (0.5 %);

(c) 20 metric tons of depleted uranium with an enrichment of 0.005 (0.5 %) or below; and

(d) 20 metric tons of thorium.

27. Safeguards with respect to nuclear material in irradiated fuel which is transferred for the purpose of reprocessing may also be suspended if the State or States concerned have, with the agreement of the Agency, placed under safeguards substitute nuclear material in accordance with paragraph 30(d) of this Agreement for the period of suspension. In addition, safeguards with respect to plutonium contained in irradiated fuel which is transferred for the purpose of reprocessing may be suspended for a period not to exceed six months if the State or States concerned have, with the agreement of the Agency, placed under safeguards a quantity of uranium whose enrichment in the isotope uranium-235 is not less than 0.9 (90%) and the uranium-235 content of which is equal in weight to such plutonium. Upon expiration of the said six months or the completion of reprocessing, whichever is earlier, safeguards shall, with the agreement of the Agency, be applied to such plutonium and shall cease to apply to the uranium substituted therefor.

28. Under conditions specified in the Subsidiary Arrangements, the Agency shall suspend safeguards with respect to any parts of the facilities listed in the Annex which are removed for maintenance or repair.

E. TERMINATION OF SAFEGUARDS

29. The termination of safeguards on items subject to this Agreement shall be implemented taking into account the provisions of GOV/1621 (20 August 1973).

30. Nuclear material shall no longer be subject to safeguards under this Agreement after:

(a) It has been returned to the State that originally supplied it (whether directly or through the Agency), if it was subject to safeguards only by reason of such supply and if:

(i) It was not improved while under safeguards; or

(ii) Any special fissionable material that was produced in it under safeguards has been separated out, or safeguards with respect to such produced material have been terminated ; or

(b) The Agency has determined that:

(i) It was subject to safeguards only by reason of its use in a principal nuclear facility which has been supplied wholly or substantially under a project agreement, submitted to safeguards under a safeguards agreement by the parties to a bilateral or multilateral arrangement or unilaterally submitted to safeguards under a safeguards agreement;

(ii) It has been removed from such a facility; and

(iii) Any special fissionable material that was produced in it under safeguards has been separated out, or safeguards with respect to such produced material have been terminated; or

(c) The Agency has determined that it has been consumed, or has been diluted in such a way that it is no longer usable for any nuclear activity relevant from the point of view of safeguards, or has become practicably irrecoverable; or

(d) India has, with the agreement of the Agency, placed under safeguards, as a substitute, such amount of the same element, not otherwise subject to safeguards, as the Agency has determined contains fissionable isotopes:

(i) Whose weight (with due allowance for processing losses) is equal to or greater than the weight of the fissionable isotopes of the material with respect to which safeguards are to terminate; and

(ii) Whose ratio by weight to the total substituted element is similar to or greater than the ratio by weight of the fissionable isotopes of the material with respect to which safeguards are to terminate to the total weight of such material;

provided that the Agency may agree to the substitution of plutonium for uranium-235 contained in uranium whose enrichment is not greater than 0.05 (5.0 %); or

(e) It has been transferred out of India under paragraph 33(d) of this Agreement, provided that such material shall again be subject to safeguards if it is returned to India; or

(f) The terms of this Agreement, pursuant to which it was subject to safeguards under this Agreement, no longer apply, by expiration of this Agreement or otherwise.

31. If India wishes to use safeguarded source material for non-nuclear purposes, such as the production of alloys or ceramics, it shall agree with the Agency on the circumstances under which the safeguards on such material may be terminated.

32. Safeguards shall be terminated on a facility listed in the Annex after India and the Agency have jointly determined that the facility is no longer usable for any nuclear activity relevant from the point of view of safeguards. Safeguards on non-nuclear material, equipment and components subject to this Agreement may be terminated as and when the non-nuclear material, equipment or components have been returned to the supplier or arrangements have been made by the Agency to safeguard the non-nuclear material, equipment or components in the State to which it is being transferred, or when India and the Agency have jointly determined that the non-nuclear material, equipment or component in question has been consumed, is no longer usable for any nuclear activity relevant from the point of view of safeguards or has become practicably irrecoverable. Safeguards may be terminated on heavy water upon India's placing under safeguards as substitute the same amount of heavy water of equivalent or better heavy water concentration.

F. TRANSFERS

33. No safeguarded nuclear material shall be transferred outside the jurisdiction of India until the Agency has satisfied itself that one or more of the following conditions apply:

(a) The material is being returned, under the conditions specified in paragraph 30(a) of this Agreement, to the State that originally supplied it; or

(b) The material is being transferred subject to the provisions of paragraph 26 or 27 of this Agreement; or

(c) Arrangements have been made by the Agency to safeguard the material in the State to which it is being transferred; or

(d) The material was not subject to safeguards pursuant to a project agreement and will be subject, in the State to which it is being transferred, to safeguards other than those of the Agency but generally consistent with such safeguards and accepted by the Agency.

34. India shall notify the Agency of its intention to transfer within its jurisdiction any nuclear material, non-nuclear material, equipment or component subject to this Agreement to any facility or location in India to which paragraph 11(f) applies and shall provide to the Agency, before such transfer is effected, the necessary information to enable the Agency to make arrangements for the application of safeguards to such nuclear material, non-nuclear material, equipment or component after its transfer. The Agency shall also be given the opportunity as early as possible in advance of such a transfer to review the design of the facility for the sole purpose of determining that the arrangements provided for in this Agreement can be effectively applied. India may transfer the nuclear material, non-nuclear material, equipment or component only after the Agency has confirmed that it has made such arrangements.

35. India shall notify the Agency of its intention to transfer any nuclear material, non-nuclear material, equipment or component subject to this Agreement to a recipient which is not under

the jurisdiction of India. Except as provided for in paragraph 30(a) of this Agreement, such nuclear material, non-nuclear material, equipment or component shall be so transferred only after the Agency has informed India that it has satisfied itself that Agency safeguards will apply with respect to the nuclear material, non-nuclear material, equipment or component in the recipient country. Upon receipt by the Agency of the notification of transfer from India and the confirmation of receipt by the recipient country, safeguards on such nuclear material, non-nuclear material, equipment or component shall be terminated under this Agreement.

36. The notifications referred to in paragraphs 34 and 35 of this Agreement shall be made to the Agency sufficiently in advance to enable it to make the arrangements required before the transfer is effected. The Agency shall promptly take any necessary action. The time limits for and the contents of these notifications shall be set out in the Subsidiary Arrangements.

III. SAFEGUARDS PROCEDURES

A. GENERAL PROCEDURES

Introduction

37. The safeguards procedures to be applied by the Agency are those specified in this Agreement, as well as such additional procedures as result from technological developments, and other procedures as may be agreed to between the Agency and India. The safeguards procedures set forth below shall be followed, as far as relevant, with respect to any item subject to this Agreement.

38. The Agency shall conclude with India Subsidiary Arrangements concerning the implementation of the safeguards procedures referred to above. The Subsidiary Arrangements shall also include any necessary arrangements for the application of safeguards to any item subject to this Agreement, including such containment and surveillance measures as are required for the effective implementation of safeguards. The Subsidiary Arrangements shall enter into force no later than six months after entry into force of this Agreement.

Design Review

39. The Agency shall review the design of principal nuclear facilities, for the sole purpose of satisfying itself that a facility will permit the effective application of safeguards.

40. The design review of a principal nuclear facility shall take place at as early a stage as possible. In particular, such review shall be carried out in the case of:

(a) An Agency project, before the project is approved;

(b) A bilateral or multilateral arrangement under which the responsibility for administering safeguards is to be transferred to the Agency, or an activity or facility unilaterally submitted by India, before the Agency assumes safeguards responsibilities with respect to the facility;

(c) A transfer of safeguarded nuclear material to a principal nuclear facility whose design has not previously been reviewed, before such transfer takes place; and

(d) A significant modification of a principal nuclear facility whose design has previously been reviewed, before such modification is undertaken.

41. To enable the Agency to perform the required design review, India shall submit to it relevant design information sufficient for the purpose, including information on such basic characteristics of the principal nuclear facility as may bear on the Agency's safeguards procedures. The Agency shall require only the minimum amount of information and data consistent with carrying out its responsibility under this section. It shall complete the review promptly after the submission of this information by India and shall notify the latter of its conclusions without delay.

42. If the Agency wishes to examine design information which India regards as sensitive, the Agency shall, if India so requests, conduct the examination on premises in India. Such information should not be physically transmitted to the Agency provided that it remains readily available for examination by the Agency in India.

Records

43. India shall arrange for the keeping of records with respect to principal nuclear facilities and also with respect to all safeguarded nuclear material outside such facilities. For this purpose India and the Agency shall agree on a system of records with respect to each facility and also with respect to such material, on the basis of proposals to be submitted by India in sufficient time to allow the Agency to review them before the records need to be kept.

44. All records shall be kept in English.

45. The records shall consist, as appropriate, of:

(a) Accounting records of all safeguarded nuclear material; and

(b) Operating records for principal nuclear facilities.

46. All records shall be retained for at least two years.

Reports

General Requirements

47. India shall submit to the Agency reports with respect to the production, processing and use of safeguarded nuclear material in or outside principal nuclear facilities. For this purpose, India and the Agency shall agree on a system of reports with respect to each facility and also with respect to safeguarded nuclear material outside such facilities, on the basis of proposals to be submitted by India in sufficient time to allow the Agency to review them before the reports need to be submitted. The reports need include only such information as is relevant for the purpose of safeguards.

48. All reports shall be submitted in English.

Routine Reports

49. Routine reports shall be based on the records compiled in accordance with paragraphs 43 to 46 of this Agreement and shall consist, as appropriate, of:

(a) Accounting reports showing the receipt, transfer out, inventory and use of all safeguarded nuclear material. The inventory shall indicate the nuclear and chemical composition and physical form of all material and its location on the date of the report; and

(b) Operating reports showing the use that has been made of each principal nuclear facility since the last report and, as far as possible, the programme of future work in the period until the next routine report is expected to reach the Agency.

50. The first routine report shall be submitted as soon as:

(a) There is any safeguarded nuclear material to be accounted for; or

(b) The principal nuclear facility to which it relates is in a condition to operate.

Progress in Construction

51. The Agency may request information as to when particular stages in the construction of a principal nuclear facility have been or are to be reached.

Special Reports

52. India shall report to the Agency without delay:

(a) If any unusual incident occurs involving actual or potential loss or destruction of, or damage to, any safeguarded nuclear material or principal nuclear facility;

(b) If there is good reason to believe that safeguarded nuclear material is lost or unaccounted for in quantities that exceed the normal operating and handling losses that have been accepted by the Agency as characteristic of the facility; or

(c) Disruption of operation of facilities listed in the Annex on account of material violation or breach of bilateral or multilateral arrangements to which India is a party.

53. India shall report to the Agency, as soon as possible, and in any case within two weeks, any transfer not requiring advance notification that will result in a significant change (to be defined by the Agency in agreement with India) in the quantity of safeguarded nuclear material in a principal nuclear facility. Such report shall indicate the amount and nature of the material and its intended use.

Amplification of Reports

54. At the Agency's request, India shall submit amplifications or clarifications of any report, in so far as relevant for the purpose of safeguards.

Inspections

General Procedures

55. The Agency may inspect any items subject to this Agreement.

56. The purpose of safeguards inspections under this Agreement shall be to verify compliance by India with this Agreement and to assist India in complying with this Agreement and in resolving any questions arising out of the implementation of safeguards.

57. The number, duration and intensity of inspections actually carried out shall be kept to the minimum consistent with the effective implementation of safeguards, and if the Agency considers that the authorized inspections are not all required, fewer shall be carried out.

58. Inspectors shall neither operate any facility themselves nor direct the staff of a facility to carry out any particular operation.

Routine Inspections

59. Routine inspections may include, as appropriate:

    (a) Audit of records and reports;

    (b) Verification of the amount of safeguarded nuclear material by physical inspection, measurement and sampling;

    (c) Examination of principal nuclear facilities, including a check of their measuring instruments and operating characteristics; and

    (d) Check of the operations carried out at principal nuclear facilities.

60. Whenever the Agency has the right of access to a principal nuclear facility at all times, it may perform inspections of which notice as required by paragraph 4 of the Inspectors Document need not be given, in so far as this is necessary for the effective application of safeguards. The actual procedures to implement these provisions shall be agreed upon between India and the Agency.

Initial Inspections of a Principal Nuclear Facility

61. To verify that the construction of a principal nuclear facility is in accordance with the design reviewed by the Agency, an initial inspection or inspections of the facility may be carried out:

    (a) As soon as possible after the facility has come under Agency safeguards, in the case of a facility already in operation; and

    (b) Before the facility starts to operate, in other cases.

62. The measuring instruments and operating characteristics of the facility shall be reviewed to the extent necessary for the purpose of implementing safeguards. Instruments that will be used to obtain data on the nuclear materials in the facility may be tested to determine their satisfactory functioning. Such testing may include the observation by inspectors of

commissioning or routine tests by the staff of the facility, but shall not hamper or delay the construction, commissioning or normal operation of the facility.

Special Inspections

63. The Agency may carry out special inspections if:

(a) The study of a report indicates that such inspection is desirable; or

(b) Any unforeseen circumstance requires immediate action.

The Board shall subsequently be informed of the reasons for and the results of each such inspection.

64. The Agency may also carry out special inspections of substantial amounts of safeguarded nuclear material that are to be transferred outside the jurisdiction of India, for which purpose India shall give the Agency sufficient advance notice of any such proposed transfer.

B. SPECIAL PROCEDURES FOR REACTORS

Reports

65. The frequency of submission of routine reports shall be agreed between the Agency and India, taking into account the frequency established for routine inspections. However, at least two such reports shall be submitted each year and in no case shall more than 12 such reports be required in any year.

Inspections

66. One of the initial inspections of a reactor shall if possible be made just before the reactor first reaches criticality.

67. The maximum frequency of routine inspections of a reactor and of the safeguarded nuclear material in it shall be determined from the following table:

Whichever is the largest of: (a) Facility inventory (including loading); (b) Annual throughput; (c) Maximum potential annual production of special fissionable material (Effective kilograms of nuclear material)	Maximum number of routine inspections annually
Up to 1 More than 1 and up to 5 More than 5 and up to 10 More than 10 and up to 15 More than 15 and up to 20 More than 20 and up to 25 More than 25 and up to 30 More than 30 and up to 35 More than 35 and up to 40 More than 40 and up to 45 More than 45 and up to 50 More than 50 and up to 55 More than 55 and up to 60 More than 60	0 1 2 3 4 5 6 7 8 9 10 11 12 Right of access at all times

68. The actual frequency of inspection of a reactor shall take account of:

(a) The fact that India possesses irradiated fuel reprocessing facilities:

(b) The nature of the reactor; and

(c) The nature and amount of the nuclear material produced or used in the reactor.

C. SPECIAL PROCEDURES RELATING TO SAFEGUARDED NUCLEAR MATERIAL OUTSIDE PRINCIPAL NUCLEAR FACILITIES

Nuclear Material in Research and Development Facilities

Routine Reports

69. Only accounting reports need be submitted in respect of nuclear material in research and development facilities. The frequency of submission of such routine reports shall be agreed between the Agency and India, taking into account the frequency established for routine inspections; however, at least one such report shall be submitted each year and in no case shall more than 12 such reports be required in any year.

Routine Inspections

70. The maximum frequency of routine inspections of safeguarded nuclear material in a research and development facility shall be that specified in the table in paragraph 67 of this Agreement for the total amount of material in the facility.

Source Material in Sealed Storage

71. The following simplified procedures for safeguarding stockpiled source material shall be applied if India undertakes to store such material in a sealed storage facility and not to remove it therefrom without previously informing the Agency.

Design of Storage Facilities

72. India shall submit to the Agency information on the design of each sealed storage facility and agree with the Agency on the method and procedure for sealing it.

Routine Reports

73. Two routine accounting reports in respect of source material in sealed storage shall be submitted each year.

Routine Inspections

74. The Agency may perform one routine inspection of each sealed storage facility annually.

Removal of Material

75. India may remove safeguarded source material from a sealed storage facility after informing the Agency of the amount, type and intended use of the material to be removed, and providing sufficient other data in time to enable the Agency to continue safeguarding the material after it has been removed.

Nuclear Material in Other Locations

76. Except to the extent that safeguarded nuclear material outside of principal nuclear facilities is covered by any of the provisions set forth in paragraphs 69 to 75 of this Agreement, the following procedures shall be applied with respect to such material (for example, source material stored elsewhere than in a sealed storage facility, or special fissionable material used in a sealed neutron source in the field).

Routine Reports

77. Routine accounting reports in respect of all safeguarded nuclear material in this category shall be submitted periodically. The frequency of submission of such reports shall be agreed between the Agency and India, taking into account the frequency established for routine inspections; however, at least one such report shall be submitted each year and in no case shall more than 12 such reports be required in any year.

Routine Inspections

78. The maximum frequency of routine inspections of safeguarded nuclear material in this category shall be one inspection annually if the total amount of such material does not exceed five effective kilograms, and shall be determined from the table in paragraph 67 of this Agreement if the amount is greater.

D. PROVISIONS FOR REPROCESSING PLANTS

Introduction

79. Additional procedures applicable to the safeguarding of reprocessing plants are set out below.

Special Procedures

Reports

80. The frequency of submission of routine reports shall be once each calendar month.

Inspections

81. A reprocessing plant having an annual throughput not exceeding 5 effective kilograms of nuclear material, and the safeguarded nuclear material in it, may be routinely inspected twice a year. The reprocessing plant, having an annual throughput exceeding 5 effective kilograms of nuclear material, and the safeguarded nuclear material in it, may be inspected at all times. The arrangements for inspections set forth in paragraph 60 of this Agreement shall apply to all inspections to be made under this paragraph. It is understood that for plants having an annual throughput of more than 60 effective kilograms, the right of access at all times would be normally be implemented by means of continuous inspection.

82. When a reprocessing plant is under Agency safeguards only because it contains safeguarded nuclear material, the inspection frequency shall be based on the rate of delivery of safeguarded nuclear material.

83. India and the Agency shall cooperate in making all the necessary arrangements to facilitate the taking, shipping or analysis of samples, due account being taken of the limitations imposed by the characteristics of a plant already in operation when placed under Agency safeguards.

Mixtures of Safeguarded and Unsafeguarded Nuclear Material

84. India and the Agency may agree on the following special arrangements in the case of a reprocessing plant which has not been supplied wholly or substantially under a project agreement, submitted to safeguards under a safeguards agreement by the parties to a bilateral or multilateral arrangement or unilaterally submitted to safeguards under a safeguards agreement, and in which safeguarded and unsafeguarded nuclear materials are present:

(a) Subject to the provisions of sub-paragraph (b) below, the Agency shall restrict its safeguards procedures to the area in which irradiated fuel is stored, until such time as all or any part of such fuel is transferred out of the storage area into other parts of the plant. Safeguards procedures shall cease to apply to the storage area or plant when either contains no safeguarded nuclear material; and

(b) Where possible, safeguarded nuclear material shall be measured and sampled separately from unsafeguarded material, and at as early a stage as possible. Where separate measurement, sampling or processing are not possible, the whole of the material being processed in that campaign shall be subject to the safeguards procedures set out in Part III.D of this Agreement. At the conclusion of the processing the nuclear material that is thereafter to be safeguarded shall be selected by agreement between India and the Agency from the whole output of the plant resulting from that campaign, due account being taken of any processing losses accepted by the Agency.

E. PROVISIONS FOR CONVERSION PLANTS, ENRICHMENT PLANTS AND FABRICATION PLANTS

Introduction

85. Additional procedures applicable to conversion plants and fabrication plants are set out below. This terminology is synonymous with the term "a plant for processing or fabricating nuclear material (excepting a mine or ore-processing plant)" which is used in paragraph 117 of this Agreement.

86. In the event that India decides to offer an enrichment plant in the future as a facility subject to this Agreement, the Agency and India shall consult and agree on the application of the Agency's safeguards procedures for enrichment plants before any such facility is added to the Annex.

Special Procedures

Reports

87. The frequency of submission of routine reports shall be once each calendar month.

Inspections

88. A conversion plant or a fabrication plant which has been supplied wholly or substantially under a project agreement, submitted to safeguards under a safeguards agreement by the parties to a bilateral or multilateral arrangement, or unilaterally submitted to safeguards under a safeguards agreement, and the nuclear material in it, may be inspected at all times if the plant inventory at any time, or the annual input, of nuclear material exceeds five effective kilograms. Where neither the inventory at any time, nor the annual input, exceeds five effective kilograms of nuclear material, the routine inspections shall not exceed two a year. The arrangements for inspections set forth in paragraph 57 of this Agreement shall apply to all inspections to be made under this paragraph. It is understood that, for plants having an inventory at any time, or an annual input, of more than 60 effective kilograms, the right of access at all times would normally be implemented by means of continuous inspection. Where neither the inventory at any time nor the annual input exceeds one effective kilogram of nuclear material, the plant would not normally be subject to routine inspection.

89. When a conversion plant or a fabrication plant which has not been supplied wholly or substantially under a project agreement, submitted to safeguards under a safeguards agreement by the parties to a bilateral or multilateral arrangement or unilaterally submitted to safeguards under a safeguards agreement contains safeguarded nuclear material, the frequency of routine inspections shall be based on the inventory at any time and the annual input of safeguarded nuclear material. Where the inventory at any time, or the annual input, of safeguarded nuclear material exceeds five effective kilograms the plant may be inspected at all times. Where neither the inventory at any time, nor the annual input, exceeds five effective kilograms of safeguarded nuclear material, the routine inspections shall not exceed two a year. The arrangements for inspection set forth in paragraph 60 shall apply to all inspections to be made under this paragraph. It is understood that, for plants having an inventory at any time, or an annual input, of more than 60 effective kilograms, the right of access at all times would normally be implemented by means of continuous inspection. Where neither the inventory at any time nor the annual input exceeds one effective kilogram of nuclear material, the plant would not normally be subject to routine inspection.

90. The intensity of inspection of safeguarded nuclear material at various steps in a conversion plant or a fabrication plant shall take account of the nature, isotopic composition and amount of safeguarded nuclear material in the plant. Safeguards shall be applied in accordance with the general principles set forth in paragraphs 4 to 8 of this Agreement. Emphasis shall be placed on inspection to control uranium of high enrichments and plutonium.

91. Where a plant may handle safeguarded and unsafeguarded nuclear material, India shall notify the Agency in advance of the programme for handling safeguarded batches to enable the Agency to make inspections during these periods, due account being also taken of the arrangements under paragraph 92 of this Agreement.

92. India and the Agency shall cooperate in making all the necessary arrangements to facilitate the preparation of inventories of safeguarded nuclear material and the taking, shipping and/or analysis of samples, due account being taken of the limitations imposed by the characteristics of a plant already in operation when placed under Agency safeguards.

Residues, Scrap and Waste

93. India shall ensure that safeguarded nuclear material contained in residues, scrap or waste created during conversion or fabrication is recovered, as far as is practicable, in its facilities and within a reasonable period of time. If such recovery is not considered practicable by India India and the Agency shall cooperate in making arrangements to account for and dispose of the material.

Safeguarded and Unsafeguarded Nuclear Material

94. India and the Agency may agree on the following special arrangements in the case of a conversion plant or a fabrication plant which has not been supplied wholly or substantially under a project agreement, submitted to safeguards under a safeguards agreement by the parties to a bilateral or multilateral arrangement or unilaterally submitted to safeguards under a safeguards agreement, and in which safeguarded and unsafeguarded nuclear material are both present:

    (a) Subject to the provisions of sub-paragraph (b) below, the Agency shall restrict its safeguards procedures to the area in which safeguarded nuclear material is stored, until such time as all or any part of such nuclear material is transferred out of the storage area into other parts of the plant. Safeguards procedures shall cease to be applied to the storage area or plant when it contains no safeguarded nuclear material; and

    (b) Where possible, safeguarded nuclear material shall be measured and sampled separately from unsafeguarded nuclear material, and at as early a stage as possible. Where separate measurement, sampling or processing is not possible, any nuclear material containing safeguarded nuclear material shall be subject to the safeguards procedures set out in Part III.E of this Agreement. At the conclusion of processing, the nuclear material that is thereafter to be safeguarded shall be selected, in accordance with paragraph 96 of this Agreement when applicable, by agreement between India and the Agency, due account being taken of any processing losses accepted by the Agency.

Blending of Nuclear Material

95. When safeguarded nuclear material is to be blended with either safeguarded or unsafeguarded nuclear material, the State shall notify the Agency sufficiently in advance of the programme of blending to enable the Agency to exercise its right to obtain evidence, through inspection of the blending operation or otherwise, that the blending is performed according to the programme.

96. When safeguarded and unsafeguarded nuclear material are blended, if the ratio of fissionable isotopes in the safeguarded component going into the blend to all the fissionable isotopes in the blend is 0.3 or greater, and if the concentration of fissionable isotopes in the unsafeguarded nuclear material is increased by such blending, then the whole blend shall remain subject to safeguards. In other cases, the following procedures shall apply:

    (a) Plutonium/plutonium blending: The quantity of the blend that shall continue to be safeguarded shall be such that its weight, when multiplied by the square of the weight fraction of contained fissionable isotopes, is not less than the weight of originally safeguarded plutonium multiplied by the square of the weight fraction of fissionable isotopes therein, provided however that:

(i) In cases where the weight of the whole blend, when multiplied by the square of the weight fraction of contained fissionable isotopes, is less than the weight of originally safeguarded plutonium multiplied by the square of the weight fraction of fissionable isotopes therein, the whole of the blend shall be safeguarded; and

(ii) The number of fissionable atoms in the portion of the blend that shall continue to be under safeguards shall in no case be less than the number of fissionable atoms in the originally safeguarded plutonium;

(b) Uranium/uranium blending: The quantity of the blend that shall continue to be safeguarded shall be such that the number of effective kilograms is not less than the number of effective kilograms in the originally safeguarded uranium, provided however that:

(i) In cases where the number of effective kilograms in the whole blend is less than in the safeguarded uranium, the whole of the blend shall be safeguarded; and

(ii) The number of fissionable atoms in the portion of the blend that shall continue to be under safeguards shall in no case be less than the number of fissionable atoms in the originally safeguarded uranium;

(c) Uranium/plutonium blending: The whole of the resultant blend shall be safeguarded until the uranium and the plutonium constituents are separated. After separation of the uranium and plutonium, safeguards shall apply to the originally safeguarded component; and

(d) Due account shall be taken of any processing losses agreed upon between the State and the Agency.

IV. AGENCY INSPECTORS

97. The provisions of paragraphs 1 to 10 and 12 to 14, inclusive, of the Inspectors Document shall apply to Agency inspectors performing functions pursuant to this Agreement. However, paragraph 4 of the Inspectors Document shall not apply with regard to any facility or to nuclear material to which the Agency has access at all times. The actual procedures to implement paragraph 60 of this Agreement shall be agreed to between the Agency and India.

98. The relevant provisions of the Agreement on the Privileges and Immunities of the Agency (INFCIRC/9/Rev.2) shall apply to the Agency, its inspectors performing functions under this Agreement and to any property of the Agency used by them in the performance of their functions under this Agreement.

V. PHYSICAL PROTECTION

99. India shall take all suitable measures necessary for the physical protection of the facilities and nuclear material subject to this Agreement, taking into account the recommendations made in Agency's document INFCIRC/225/Rev.4, as may be amended from time to time.

VI. SYSTEM OF ACCOUNTING AND CONTROL

100. India shall establish and maintain a system of accounting for and control of all items subject to safeguards under this Agreement, in accordance with provisions to be set out in the Subsidiary Arrangements.

VII. FINANCE

101. India and the Agency shall each bear any expense incurred in the implementation of their responsibilities under this Agreement. The Agency shall reimburse India for any special expenses, including those referred to in paragraph 6 of the Inspectors Document, incurred by India or persons under its jurisdiction at the written request of the Agency, if India notified the Agency before the expense was incurred that reimbursement would be required. These provisions shall not prejudice the allocation of expenses attributable to a failure by either India or the Agency to comply with this Agreement.

102. India shall ensure that any protection against third party liability, including any insurance or other financial security, in respect of a nuclear incident occurring in a facility under its jurisdiction shall apply to the Agency and its inspectors when carrying out their functions under this Agreement as that protection applies to nationals of India.

VIII. NON-COMPLIANCE

103. If the Board determines in accordance with Article XII.C of the Statute of the Agency that there has been any non-compliance by India with this Agreement, the Board shall call upon India to remedy such non-compliance forthwith, and shall make such reports as it deems appropriate. In the event of failure by India to take full remedial action within a reasonable time, the Board may take any other measures provided for in Article XII.C of the Statute. The Agency shall promptly notify India in the event of any determination by the Board pursuant in this regard.

IX. COOPERATION, INTERPRETATION AND APPLICATION OF THE AGREEMENT AND SETTLEMENT OF DISPUTES

104. The Agency and India shall cooperate to facilitate the implementation of this Agreement.

105. At the request of either India or the Agency, there shall be consultations about any question arising out of the interpretation or application of this Agreement. India and the Agency shall endeavour to settle by negotiation any dispute arising from the interpretation or application of this Agreement. India shall have the right to request that any question arising out of the interpretation or application of the Agreement be considered by the Board. The Board shall invite India to participate in the discussion of any such question by the Board.

106. In the event of any question or questions arising from the implementation of this Agreement, the Agency shall provide India with an opportunity to clarify and facilitate the resolution of such questions. The Agency shall not draw any conclusions in connection with the question or questions until India has had an opportunity to provide clarifications.

X. FINAL CLAUSES

107. India and the Agency shall, at the request of either of them, consult about amending this Agreement.

108. This Agreement shall enter into force on the date on which the Agency receives from India written notification that India's statutory and/or constitutional requirements for entry into force have been met.

109. This Agreement shall remain in force until, in accordance with its provisions, safeguards have been terminated on all items subject to this Agreement, or until terminated by mutual agreement of the parties to this Agreement.

XI. DEFINITIONS

110. "Agency" means the International Atomic Energy Agency.

111. "Board" means the Board of Governors of the Agency.

112. "Campaign" means the period during which the chemical processing equipment in a reprocessing plant is operated between two successive wash-outs of the nuclear material present in the equipment.

113. "Conversion plant" means a facility (excepting a mine or ore-processing plant) to improve unirradiated nuclear material, or irradiated nuclear material that has been separated from fission products, by changing its chemical or physical form so as to facilitate further use or processing. The term conversion plant includes the facility's storage and analytical sections. The term does not include a plant intended for separating the isotopes of nuclear material.

114. "Director General" means the Director General of the Agency.

115. "Effective kilograms" means:

(i) In the case of plutonium, its weight in kilograms;

(ii) In the case of uranium with an enrichment of 0.01 (1 %) and above, its weight in kilograms multiplied by the square of its enrichment;

(iii)In the case of uranium with an enrichment below 0.01 (1 %) and above 0.005 (0.5 %), its weight in kilograms multiplied by 0.0001; and

(iv) In the case of depleted uranium with an enrichment of 0.005 (0.5 %) or below, and in the case of thorium, its weight in kilograms multiplied by 0.00005.

116. "Enrichment plant" means a plant for separating the isotopes of nuclear material.

117. "Facility" means, for the purposes of this Agreement:

(i) A "principal nuclear facility", which means a reactor, a plant for processing nuclear material irradiated in a reactor, a plant for separating the isotopes of a nuclear material, a plant for processing or fabricating nuclear material (excepting a mine or

ore-processing plant) or a facility or plant of such other type as may be designated by the Board from time to time, including associated storage facilities, as well as a critical facility or a separate storage installation;

(ii) A research and development facility as defined in paragraph 127 of this Agreement;

(iii) Any location where nuclear material in amounts greater than one effective kilogram is customarily used;

(iv) A plant for the upgrading of heavy water or a separate storage installation for heavy water.

118. "Fuel fabrication plant" means a plant to manufacture fuel elements or other components containing nuclear material and includes the plant's storage and analytical sections.

119. "Improved" means, with respect to nuclear material, that either:

(i) The concentration of fissionable isotopes in it has been increased; or

(ii) The amount of chemically separable fissionable isotopes in it has been increased; or

(iii) Its chemical or physical form has been changed so as to facilitate further use or processing.

120. "Inspector" means an Agency official designated in accordance with the Inspectors Document.

121. "Inspectors Document" means the Annex to the Agency's document GC(V)/INF/39.

122. "Nuclear material" means any source or special fissionable material as defined in Article XX of the Statute.

123. "Produced, processed or used" means any utilization or any alteration of the physical or chemical form or composition, including any change of the isotopic composition, of nuclear material;

124. "Project agreement" means a safeguards agreement relating to an Agency project and containing provisions as foreseen in Article XI.F.4.(b) of the Statute.

125. "Reactor" means any device in which a controlled, self-sustaining fission chain-reaction can be maintained.

126. "Reprocessing plant" means a facility to separate irradiated nuclear materials and fission products, and includes the facility's head-end treatment section and its associated storage and analytical sections. This term is synonymous with the term "a plant for processing nuclear material irradiated in a reactor" which is used in paragraph 117 of this Agreement.

127. "Research and development facility" means a facility, other than a principal nuclear facility, used for research or development in the field of nuclear energy.

128. "Statute" means the Statute of the Agency.

129. "Throughput" means the rate at which nuclear material is introduced into a facility operating at full capacity.

130. "Unilaterally submitted" means submitted by India to Agency safeguards.

DONE at Vienna, on the day of 2008, in duplicate, in the English language.

For the GOVERNMENT OF INDIA: ATOMIC

For the INTERNATIONAL ENERGY AGENCY:

ANNEX

LIST OF FACILITIES SUBJECT TO SAFEGUARDS UNDER THE AGREEMENT BETWEEN THE GOVERNMENT OF INDIA AND THE INTERNATIONAL ATOMIC ENERGY AGENCY FOR THE APPLICATION OF SAFEGUARDS TO CIVILIAN NUCLEAR FACILITIES

	FACILITY OFFERED FOR SAFEGUARDS BY INDIA	DATE OF RECEIPT OF NOTIFICATION

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