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.