Preparatory Committee for the 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

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Promoting expanded and responsible peaceful uses of nuclear energy

Working paper submitted by the United States of America

1. In a departure from its traditional rotation of venue, the 2007 Nuclear Non-Proliferation Treaty (NPT) Preparatory Committee meeting will take place in Vienna, to honour the fiftieth anniversary of the International Atomic Energy Agency (IAEA), an institution that has been intimately involved in promoting and facilitating the peaceful uses of nuclear energy longer than the NPT itself has existed. This anniversary should give States Parties cause for reflection, both upon the great strides that have been made in economic development, medical technology, scientific research, and other fields through the application of nuclear technology, and upon the need to preserve, expand and deepen this system of benefit-sharing during the next half century.

2. Ever since President Dwight D. Eisenhower's "Atoms for peace" address to the United Nations General Assembly in 1953, the United States has been at the forefront of promoting the peaceful uses of nuclear energy within a framework of non-proliferation norms. In his speech, President Eisenhower proposed the creation of an International Atomic Energy Agency and widespread nuclear-related cooperation subject to basic non-proliferation conditions. He also pledged the energy and attention of the United States to promoting the peaceful use of atomic energy around the world.

3. Since 1953, the United States has not wavered in its support for responsible peaceful nuclear uses. It has contributed enormously to the expansion worldwide of civil nuclear power generation, nuclear-related scientific research, advances in nuclear medicine, and vital development projects such as disease eradication and water desalination efforts that employ nuclear technology.

4. Today, the United States is pursuing renewed efforts to expand the peaceful uses of nuclear power for the benefit of all mankind and in ways designed to advance the basic objective of the NPT in preventing the further spread of nuclear weapons. It is developing improved technologies and mechanisms for better sharing

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nuclear technology in ways consistent with non-proliferation norms, and seeks to make these new approaches widely available.

Article IV of the Nuclear Non-Proliferation Treaty

5. NPT article IV addresses the peaceful uses of nuclear energy. This article contains two very important provisions which must be understood in order to appreciate the contribution article IV makes to promoting peaceful uses and nuclear cooperation. Understanding these provisions also demonstrates the baselessness of efforts by the Islamic Republic of Iran and others to distort the meaning of article IV in an effort to provide cover for the Islamic Republic of Iran's nuclear weapons programme.

6. The first provision of article IV, contained in its paragraph 1, provides that "nothing in this Treaty shall be interpreted as affecting the inalienable right" of States Parties to pursue the use of nuclear energy "for peaceful purposes … in conformity with articles I and II of this Treaty". This provision reinforces the obligations of States Parties under articles I and II of the Treaty, including the obligation not to assist or receive assistance in the manufacture, and not to manufacture or otherwise acquire, nuclear weapons or other nuclear explosive devices. Nothing in article IV gives States Parties any right to technology for activities inconsistent with their NPT non-proliferation obligations.

7. The second provision, contained in paragraph 2 of article IV, calls upon all Parties to the Treaty to facilitate the "fullest possible exchange of equipment, materials and scientific and technological information" for peaceful uses of nuclear energy. This paragraph is, in effect, a legacy of President Eisenhower's "Atoms for peace" focus upon promoting peaceful uses of nuclear energy around the world to the greatest extent possible consistent with what he called "elementary prudence".

8. The text makes clear that "the fullest possible" exchange is for the "peaceful uses of nuclear energy" and thus is an undertaking founded in non-proliferation good sense. It means that, at a minimum, any transfers by supplier States (or receipt by non-nuclear-weapons States) must be consistent with the non-proliferation obligations and purposes of the Treaty. Moreover, while the NPT encourages broad sharing of the benefits of nuclear technology, nothing in it compels the transfer of any particular technology to any specific recipient.

9. Bearing these qualifications in mind, the two paragraphs of article IV together constitute a powerful articulation of the importance of peaceful nuclear cooperation and sharing the many benefits that nuclear technology brings to mankind. The United States has always been, and remains, steadfastly committed to this goal.

10. Past NPT review conferences have focused in part upon whether States Parties, particularly supplier States, are doing enough to facilitate the peaceful uses of nuclear energy as called for in article IV. The United States has supported peaceful nuclear cooperation with NPT States Parties that are in compliance with their Treaty obligations. Today the United States is dedicated to doing what it can, not merely to continue, but also to deepen and expand, worldwide cooperation in the peaceful uses of nuclear energy.

11. The United States has consistently pointed out that supplier States are not obligated to transfer any particular nuclear equipment, material and technology, and that in cases involving sensitive technology or questions regarding recipient

compliance, States Parties may be obligated by their non-proliferation undertakings in the Treaty not to make such transfers. The United States has also consistently pointed out that all transfers that do occur must be consistent with the Treaty's core non-proliferation obligations and purposes. But United States policy remains strongly supportive of expanded nuclear cooperation, and the United States is currently engaged in a number of initiatives intended to help achieve this.

United States nuclear energy cooperation

12. The United States has been active in international cooperation in nuclear energy since the early days of the nuclear age. The United States maintains 20 agreements with individual countries and groups of countries that permit United States exports of major items of nuclear equipment and material to 45 NPT Parties. It also has a separate agreement with IAEA that permits similar transfers to IAEA members that are prepared to meet United States legal and policy requirements for such cooperation.

13. United States nuclear cooperation, including in research and development, has supported important advances in medicine, agriculture and water management in over 100 countries. In support of article IV, the United States is also pursuing a number of recent initiatives and programmes to promote the development of nuclear energy for peaceful purposes while encouraging compliance with non-proliferation obligations, as discussed below.

Technical cooperation

14. Through the IAEA technical cooperation programme, the United States promotes peaceful nuclear activities in over 100 IAEA member States. United States support addresses over 50 principal areas, including health care and nutrition, water resources, food security, sustainable development, basic science and nuclear safety and security.

15. The United States provides assistance to the technical cooperation programme in several ways. The first is through an annual voluntary pledge to the Technical Cooperation Fund (TCF), which supports the Department of Technical Cooperation's core projects. The United States endeavours to provide approximately 25 per cent of the total annual voluntary target. The United States pledge to TCF for fiscal year 2006, for example, was $19.13 million.

16. The second way the United States supports the technical cooperation programme is through in-kind contributions in the form of services, such as fellowships, training, equipment and experts. This United States training programme has been operated continuously for the past 30 years, and during this time 128 joint United States/IAEA training courses have been organized and presented at the Argonne National Laboratory in the United States. More than 3,500 persons from 121 countries have participated in these courses. (In 2006, a total of 83 participants from 37 countries participated in four training courses.)

17. In-kind contributions also support requests from IAEA for United States specialists in various technical fields who are provided at no cost to IAEA to contribute to staff teamwork. The United States has long been the single largest contributor to the IAEA's technical cooperation programme and is proud of its

efforts in this regard to share the benefits of nuclear technology with countries around the world.

18. Additionally, extrabudgetary contributions to IAEA are made annually to specific items that involve nuclear safety, nuclear applications and technical cooperation. While TCF resources can be distributed to all requesting eligible member States, in-kind and extrabudgetary contribution support is given, on a preferential basis, to Parties to the NPT or the Treaty of Tlatelolco. In fiscal year 2006, the United States contribution amounted to $6.87 million.

19. The United States also provides extrabudgetary contributions to support programmes in the other departments of IAEA. For example, in 2006, the State Department and the National Cancer Institute provided $500,000 and $200,000 respectively to support the IAEA Programme of Action for Cancer Therapy.

20. Nor is this all, for the United States also provides considerable assistance through bilateral arrangements. For example, it provides technical assistance and cooperation bilaterally through joint standing committees on nuclear energy cooperation with a number of countries, and through legally binding safeguards cooperation agreements with many countries, and through non-binding sister laboratory arrangements with specific institutions or organizations in specific countries. The United States also participates in and contributes to bilateral scientific exchanges and training opportunities. The United States Nuclear Regulatory Commission and Department of Energy have various cooperative arrangements with over 200 foreign counterpart institutions. These instruments have helped to institutionalize bilateral cooperation in nuclear technology, safety and security.

Enrichment and reprocessing

21. Some have asserted that any effort to restrict access to sensitive nuclear technologies (such as enrichment and reprocessing) is inconsistent with the NPT. However, the Treaty allows for discretion on the part of supplier States regarding the nature of their cooperation with other States. Indeed, during the debates of the United Nations committee that drafted the NPT, multiple proposals were made in 1967 and early 1968 that would have created a legal duty for suppliers to contribute to the development of nuclear industry in the territories of non-nuclear weapons States, affirmed an “inalienable” right of non-nuclear-weapons States to develop nuclear explosive devices for civil or “peaceful purposes”, and extended article IV nuclear cooperation explicitly to “the entire technology of reactors and fuels”. These efforts, however, were considered and rejected.

22. Since enrichment and reprocessing technologies entail an inherent capability to produce fissile material that can be used in nuclear weapons, the non-proliferation obligations of supplier States call for special restraint in any transfers of these technologies. For this reason, the IAEA Director General has referred to enrichment and reprocessing as the “Achilles heel” of the nuclear non-proliferation regime.

23. Responding to the challenge presented by these technologies, President Bush proposed in his February 2004 speech that: “The 40 nations of the Nuclear Suppliers Group should refuse to sell enrichment and reprocessing equipment and technologies to any State that does not already possess full-scale, functioning enrichment and reprocessing plants.”

24. The United States is pursuing this and other efforts to stem the spread of enrichment and reprocessing capabilities. The United States continues to believe that the best approach remains for suppliers to avoid making enrichment- or reprocessing-related (ENR) transfers to countries lacking full-scale, functioning facilities. At the same time, the United States is also actively pursuing the other part of the President's proposal, namely, for nuclear suppliers to provide reliable supply of nuclear fuel at reasonable cost in order to eliminate any need for countries to develop enrichment or reprocessing capabilities of their own.

25. In pursuing efforts to reach agreement in the Nuclear Suppliers Group on restricting such ENR transfers, the United States has emphasized that most NPT Parties would not be affected at all as a practical matter, since more than 170 NPT Parties are not pursuing ENR capabilities anyway. This reflects the reality that such capabilities are costly and unnecessary for most countries. Moreover, innovative approaches, such as fuel supply assurances and the Global Nuclear Energy Partnership (GNEP), will help make possession of fuel-cycle technology less necessary still.

26. Under the United States fuel assurances proposal discussed below, for example, compliant NPT Parties that choose not to pursue ENR and that meet other objective criteria would benefit from assured access to nuclear fuel at reasonable prices. The broad adoption of such approaches, moreover, would benefit all countries by helping to resolve a key challenge facing the nuclear non-proliferation regime: the tension between the spread of fuel-cycle technology for peaceful purposes and the ease with which such technology can be misused for weapons purposes.

27. In an effort to uphold non-proliferation norms while such solutions are developed, the G-8 agreed to a rolling, one-year moratorium on new ENR transfers. The St. Petersburg G-8 summit called for a Nuclear Suppliers Group consensus by 2007, stating that ENR transfers "should occur only pursuant to criteria consistent with global non-proliferation norms and to those States rigorously committed to those norms".

28. Not all States Parties agree with the United States approach to the ENR issue, and some have even tried to use discussions of "inalienable" rights or article IV cooperation to excuse the Islamic Republic of Iran's pursuit of the capability to produce fissile materials for use in nuclear weapons. Nevertheless, the United States believes that all States Parties can agree on three basic points.

29. First, an NPT Party in violation of its non-proliferation obligations should not expect to receive nuclear cooperation of any kind from other countries, and it should not be surprised if appropriate measures are taken by other countries to limit its access to such nuclear technology.

30. Second, the creation of, and widespread participation in, a robust and reliable internationally backed fuel-supply system would greatly reduce any country's perceived need to engage in costly, uncertain and proliferation-risky fuel-cycle technology while helping facilitate the expansion of nuclear cooperation and the use of nuclear technology for civil power generation in an energy-hungry world. And third, strict compliance with non-proliferation obligations and commitments is essential to the preservation and expansion of international nuclear cooperation.

United States proposal on reliable fuel supply

31. In a major speech in February 2004 at the National Defense University, President Bush called on the leading nuclear suppliers to ensure reliable access at reasonable cost to fuel for civil reactors for States not pursuing enrichment and reprocessing (ENR) technologies, which are highly proliferation-sensitive. Creation of a reliable fuel-supply system would contribute greatly to the world's ability to meet its rapidly growing energy needs without the environmental and long-term supply problems caused by fossil fuel consumption. At the same time, a reliable fuel-supply system would make this contribution in a proliferation-responsible way by removing the perceived incentive for some countries to pursue ENR technologies that would further spread the capability to produce fissile materials usable in nuclear weapons.

32. This approach has received support from key players in the international community. In July 2006, for instance, the G-8 reiterated support for this proposal. In his November 2005 address to the Carnegie Conference, the IAEA Director General spoke in favour of ensuring reliable access to nuclear fuel as a means of preventing nuclear weapons proliferation, by removing the incentive or justification for the development of indigenous fuel-cycle capabilities, while preserving the benefits of international cooperation in nuclear power generation and research.

Multilateral mechanism

33. In June 2006, the United States, France, Germany, the Netherlands, the Russian Federation and the United Kingdom introduced a "Concept for a multilateral mechanism for reliable access to nuclear fuel", for discussion at IAEA. The Concept includes a number of complementary initiatives that could be implemented in the near future as a first step to establish a backup system at IAEA that States could turn to in the event of supply disruptions.

34. IAEA is currently studying this and other fuel-supply proposals, including ones offered by the Russian Federation, Germany and Japan, and is expected to issue a report to its membership on the subject in June 2007.

35. The United States believes that such a fuel-supply mechanism should be adopted by the IAEA Board of Governors in accordance with the Agency's statute, endorsed by the General Conference, and formally supported by supplier States. Under the six-nation Concept, if commercial supply were disrupted for reasons other than questions regarding the receiving State's non-proliferation obligations, that State could approach the IAEA for assistance. The Agency could then call on a cooperating supplier State to provide the needed fuel in accordance with the supplier State's domestic requirements for approval of nuclear transfers.

36. To be eligible to receive fuel under the mechanism, the recipient State would have to: (a) have brought into force a comprehensive safeguards agreement and additional protocol; (b) have no outstanding safeguards implementation issues pending with the Agency; (c) have adhered to accepted international nuclear safety and physical protection standards; and (d) have chosen not to pursue sensitive nuclear fuel cycle activities. Participating in this mechanism would be no renunciation of "rights", but would rather represent merely a State's policy choice not to pursue one course of action in favour of a more economically feasible and internationally cooperative route that offers greater benefits and entails fewer risks.

37. In implementing the mechanism, supplier States would endeavour to allow transfers consistent with their national legal and regulatory requirements and commit in principle not to oppose such exports from other supplier States. Cooperation among commercial suppliers of enriched uranium could provide for backup arrangements, in cooperation with IAEA, if a particular commercial supplier were unable to meet contractual supply commitments. In this fashion, the internationally backed system could provide much greater reliability for fuel consumers than is available today through supplier-specific arrangements.

38. To help speed the development of such a reliable fuel supply system, the United States is already taking action. United States officials have announced that the United States intends to convert up to 17.4 tons of highly enriched uranium in excess to national security needs into low-enriched uranium to be held as a reserve in case the backup mechanism is unable to provide an alternate supplier. The United States has encouraged other suppliers to create similar reserves. Such reserves could be held nationally, as in the United States, or transferred to IAEA if the supplying State so desires. President Putin of the Russian Federation has also proposed to implement, under IAEA control, a joint project on Russian territory involving establishment of an international centre for the provision of uranium enrichment services.

Global Nuclear Energy Partnership

39. The new United States effort known as the Global Nuclear Energy Partnership (GNEP) was publicly announced on 6 February 2006, as part of President Bush's Advanced Energy Initiative. GNEP is the latest phase of long-standing United States efforts to encourage worldwide expansion of nuclear energy as an economical, carbon-free energy source, while reducing the burdens of nuclear waste and avoiding the spread of access to sensitive technologies that could contribute to nuclear weapons proliferation.

40. Among other innovations, GNEP would develop advanced technologies for recycling spent nuclear fuel without separating plutonium, along with advanced reactors that consume transuranic elements from recycled spent fuel. Deployment of such advanced fuel-cycle technologies would substantially reduce nuclear waste and simplify its disposition. These technologies underlie the GNEP proposal to develop comprehensive, reliable nuclear fuel services, including assured supply of fresh fuel and the assured take-back of spent fuel.

41. Such comprehensive fuel services would eliminate any need for countries to undertake the expense and technical challenge of enrichment or reprocessing. GNEP also aims to develop new types of reactors more suitable than current designs to the needs and capabilities of developing countries, and, in cooperation with IAEA, to develop advanced nuclear safeguards approaches and technologies. A fundamental aim of GNEP is to reduce the barriers developing countries face in seeking to develop nuclear power. In connection with GNEP, therefore, the United States is also working with IAEA to identify the infrastructure that countries need to establish in order to manage peaceful nuclear power programmes safely and securely. The United States will work bilaterally and through IAEA to help countries to meet those infrastructure needs. Financing nuclear power can also be a challenge for many countries, and the United States is also working to develop financing mechanisms more feasible for developing countries, and strongly supports IAEA

efforts to that same end. Altogether, GNEP offers the prospect of expanding the benefits available through international nuclear cooperation and expanded nuclear power generation around the world.

Non-proliferation promotes peaceful uses

42. For such technology-sharing to continue over the long term and for such ambitious programmes to expand nuclear cooperation to succeed, the international community must have both a robust system of non-proliferation norms and safeguards obligations and it must insist on rigorous compliance with that system by all States Parties. Some States Parties have argued that article IV provides an unconditional right to nuclear energy for peaceful purposes, regardless of its proliferation implications, and that steps by other States to deny them any technology somehow violates their "inalienable" rights or their rights under the NPT. Such claims are false.

43. To begin with, as noted above, the provisions of article IV.2 on nuclear cooperation do not provide any State Party a right to receive transfers of nuclear technology for purposes contrary to the Treaty's non-proliferation purposes. Nor does article IV provide States Parties that have violated their non-proliferation obligations under the Treaty any protection from the consequences of such breach, including the imposition of appropriate measures by other States, jointly or separately, against their nuclear programmes. Moreover, the reference in the second paragraph of article IV to the "fullest possible" cooperation in sharing nuclear technology is an acknowledgement that cooperation may be limited. Where technology-sharing would contribute to proliferation, it should be avoided. Parties are not compelled by article IV to engage in nuclear cooperation with any given State, nor to provide any particular form of nuclear assistance.

44. All transfers of nuclear technology by States Parties must also be consistent with the non-proliferation obligations and purposes of the Treaty. To conform both to the overall objective of the NPT, strengthening international peace and security by halting nuclear proliferation, and to any article I and III obligations, supplier States must consider whether providing certain types of assistance, or assistance to certain countries, is consistent with the non-proliferation purposes and obligations of the NPT. In addition, suppliers must of course take into account their other international obligations and their national laws and regulations. They should withhold assistance if they believe that a specific form of cooperation would encourage or facilitate proliferation, or if they believe that a State is pursuing a nuclear weapons programme, is not in full compliance with its safeguards obligations, or is in violation of articles I or II.

45. NPT Parties have the responsibility to implement article IV in such a way that not only preserves compliant NPT Parties' right to develop peaceful uses of nuclear energy, but also does not allow for abuse of this right by Parties pursuing nuclear weapons capabilities or violating their safeguards agreements. Non-proliferation efforts that contribute to the non-proliferation principles enshrined in the NPT are not only not inconsistent with article IV, but in fact are of great value in furthering nuclear cooperation because they strengthen the non-proliferation regime upon which such cooperation must be based. These efforts include comprehensive export controls, Nuclear Suppliers Group supply guidelines, end-use restrictions and supplier-recipient assurances, interdiction measures such as the Proliferation

Security Initiative, efforts to restrict the spread of proliferation-sensitive enrichment and reprocessing technology, and national or international sanctions in response to nuclear-related proliferation problems.

46. The international system of nuclear benefit-sharing depends upon strict compliance with non-proliferation norms and principles. Rigorous non-proliferation compliance, State-of-the-art safeguards and proliferation-resistant technologies create the assurances of security needed for nuclear benefit-sharing and a viable international market in civil nuclear goods and services. Were the international community to fail to insist upon rigorous standards of compliance with the NPT core of non-proliferation requirements, the long-standing, highly successful, and expanding system of nuclear-related benefit-sharing and technological cooperation would be endangered. It might, therefore, be the countries of the developing world that would suffer the most harm if collective ambivalence about enforcing non-proliferation compliance erodes the basis of trust and assurance that make it possible for technology possessors safely to engage in nuclear trade with others.

47. After all, it is clear that technology possessors cannot and should not share their knowledge and experience if doing so would not be safe or would not be consistent with their non-proliferation obligations. The United States made its position on this very clear, for instance, during the United States Senate hearings that led up to the ratification of the NPT, when the Commissioner of the United States Atomic Energy Commission explained that “our ability to cooperate with others with the peaceful application of nuclear energy is dependent upon the assurance that our assistance will not be turned to military purposes”. Non-proliferation compliance lays the foundation upon which benefit-sharing necessarily rests.

Conclusion

48. The worldwide system of promoting the peaceful use of nuclear technology is under stress today from non-proliferation compliance challenges that could, if unchecked, undermine the system of trust and assurances upon which international nuclear cooperation is based. And it is under stress from the challenge of what the IAEA Director General has called the spread of “latent” or “virtual” nuclear weapons programmes through the increased availability of fuel-cycle technology capable of producing fissile material for nuclear weapons. Yet the system of benefit-sharing also stands on the threshold of great new advances in the development of means to broaden and deepen mankind’s use of the atom for peaceful purposes in ways consistent with non-proliferation norms.

49. For these reasons, issues related to the peaceful uses of nuclear technology should be a very high priority for all NPT States Parties during the current Treaty review cycle. It is of great importance both to the operation of the Treaty and to the success of the nuclear non-proliferation regime as a whole, that the system of nuclear benefit-sharing adapt and develop to meet the challenges it now faces and live up to its full potential as a powerful engine of economic, scientific and medical advancement for all humanity.