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## **U. S. Nuclear Cooperation With India: Issues for Congress**

**July 29, 2005**

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# U. S. Nuclear Cooperation With India: Issues for Congress

## Summary

As part of the 1950s-era Atoms for Peace program, the United States actively promoted nuclear energy cooperation with India from the mid-1950s, building nuclear reactors (Tarapur), providing heavy water for the CIRUS reactor, and allowing Indian scientists to study at U.S. nuclear laboratories. When other nations joined the Nuclear Nonproliferation Treaty (NPT) in 1968, however, India refused to join the treaty on the basis that it was discriminatory. In 1974, India exploded a “peaceful” nuclear device, demonstrating that nuclear technology transferred for peaceful purposes could be used to produce nuclear weapons. As a result, the United States has refused nuclear cooperation with India for twenty-five years and has tried to convince other states to do the same.

On July 18, 2005, President Bush announced the creation of a global partnership between the United States and India to promote stability, democracy, prosperity and peace throughout the world. One area of the partnership is civil nuclear energy cooperation. Both leaders recognized the “significance of civilian nuclear energy for meeting growing global energy demands in a cleaner and more efficient manner.” President Bush said he would “work to achieve full civil nuclear energy cooperation with India” and would “also seek agreement from Congress to adjust U.S. laws and policies.”

If implemented, this cooperation would dramatically shift U.S. nonproliferation policy and practice towards India. Such cooperation would also contravene the multilateral export control guidelines of the Nuclear Suppliers Group (NSG), which was formed in response to India's proliferation. At a time when the United States has called for all states to strengthen their domestic export control laws and implementation and for tighter multilateral controls, U.S. nuclear cooperation with India would require loosening its own nuclear export legislation, as well as creating an NSG exception. Although some states may agree that it is necessary to create a new paradigm for India, others may believe that this agreement undercuts the basic bargain of the NPT – peaceful nuclear cooperation in exchange for forswearing nuclear weapons. Observers note that U.S.-India cooperation could have wide-ranging implications for the international nuclear nonproliferation regime, and could prompt other suppliers, like China, to justify their supplying other non-nuclear-weapon states, like Pakistan.

Under the terms of the Atomic Energy Act (P.L. 95-242; 42 USC 2153 et seq), Congress must approve an agreement for cooperation. If the Administration chooses to exempt the agreement from statutory nonproliferation criteria (including a requirement that the recipient nation have full-scope nuclear safeguards), both houses of Congress must pass a joint resolution of approval. The Administration alternatively may seek to amend certain portions of the Atomic Energy Act; in particular, it could seek to amend Sections 128 and 129, both of which include nonproliferation criteria. However, the exact procedures depend on the details of cooperation, which are not yet final. This report will be updated as necessary.

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# U. S. Nuclear Cooperation With India: Issues for Congress

## Background

The United States actively promoted nuclear energy cooperation with India from the mid-1950s, building nuclear reactors (Tarapur), providing heavy water for the CIRUS reactor, and allowing Indian scientists to study at U.S. nuclear laboratories. Although India was active in negotiations of the 1968 Nuclear Nonproliferation Treaty (NPT), India refused to join the NPT on grounds that it was discriminatory. The “peaceful” nuclear test in 1974 demonstrated that nuclear technology transferred for peaceful purposes could be used to produce nuclear weapons. In the United States, the Congress responded by passing the Nuclear Non-Proliferation Act of 1978 (NNPA, P.L. 95-242), which imposed tough new requirements for U.S. nuclear exports to non-nuclear-weapon states – full-scope safeguards and termination of exports if such a state detonates a nuclear explosive device or engages in activities related to acquiring or manufacturing nuclear weapons, among other things.<sup>1</sup> Internationally, the United States created the Nuclear Suppliers Group (NSG) in 1975 to implement nuclear export controls. The NSG published guidelines in 1978 “to apply to nuclear transfers for peaceful purposes to help ensure that such transfers would not be diverted to unsafeguarded nuclear fuel cycle or nuclear explosive activities.”<sup>2</sup>

Conditioning U.S. nuclear exports on non-nuclear-weapon states having full-scope safeguards created a problem particularly for fuel supplies to India’s safeguarded Tarapur reactors. When the NNPA was enacted, the United States was supplying fuel. The Carter Administration exported two more shipments under

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<sup>1</sup> The NNPA, in part, amended the Atomic Energy Act of 1954. See 42 U.S.C. 2151 et seq. Prior to the 1970 NPT, safeguards (inspections, material protection, control and accounting) were applied to specific facilities or materials (known as INFCIRC/66-type agreements). The NPT required safeguards on all nuclear material in all peaceful nuclear activities for non-nuclear-weapon-state parties (those states not having detonated a nuclear explosive device prior to Jan. 1, 1967).

<sup>2</sup> IAEA Document INFCIRC/254, *Guidelines for Transfers of Nuclear-related Dual-use Equipment, Materials, Software, and Related Technology*. Part 1 covers “trigger list” items: those especially designed or prepared for nuclear use: (i) nuclear material; (ii) nuclear reactors and equipment; (iii) non-nuclear material for reactors; (iv) plant and equipment for reprocessing, enrichment and conversion of nuclear material and for fuel fabrication and heavy water production; and (v) associated technology. Part 2 covers dual-use items. Additional NSG criteria for dual-use exports include NPT membership and/or full-scope safeguards agreement; appropriate end-use; whether the technology would be used in a reprocessing or enrichment facility; the state’s support for nonproliferation; and the risk of potential nuclear terrorism.

executive order, despite the Nuclear Regulatory Commission's (NRC) refusal to approve an export license (on nonproliferation conditions). Given slim support in Congress, no more exports were attempted after 1980. France supplied fuel under the terms of the U.S. agreement with India until France adopted a full-scope safeguards requirement also (1984 to 1995). After the NSG adopted the full-scope safeguards condition in 1992, China picked up the slack. Russia supplied fuel from 2001 to 2004.<sup>3</sup>

## Global Partnership

The Bush Administration has been exploring ways of creating a strategic partnership with India since 2001. Indian officials identified their growing energy needs as an area for cooperation, particularly in nuclear energy. The U.S.-India 2004 Next Steps in Strategic Partnership (NSSP) initiative included expanded cooperation in civil nuclear technology as one of three goals. Phase I of the NSSP, completed in September 2004, required addressing proliferation concerns and ensuring compliance with U.S. export controls.<sup>4</sup> In September 2004, the Administration published a final ruling stating there was a presumption of approval of licenses for some items that are used in the "balance of plant" (non-reactor-related end-uses) activities at safeguarded nuclear facilities, and that are not multilaterally controlled for nuclear proliferation reasons.<sup>5</sup> "Balance of plant" activities, refers "to the part of a nuclear power plant used for power generation (e.g., turbines, controllers, or power distribution) to distinguish it from the nuclear reactor." In practice, this means certain dual-use equipment (e.g. machine tools), not controlled by the Nuclear Suppliers Group because they do not meet certain performance criteria, could be exported to the Rajasthan and Tarapur reactors.

On July 18, 2005, President Bush announced creation of a global partnership with India in a joint statement with Prime Minister Manmohan Singh.<sup>6</sup> Noting the "significance of civilian nuclear energy for meeting growing global energy demands in a cleaner and more efficient manner," President Bush said he would "work to achieve full civil nuclear energy cooperation with India" and would "also seek agreement from Congress to adjust U.S. laws and policies."

Three paragraphs of the joint statement were devoted to civil nuclear cooperation. The statement noted that the United States "will work with friends and allies to adjust international regimes to enable full civil nuclear energy cooperation

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<sup>3</sup> China was not a member of the NSG until 2004. Russia, an NSG member, exported fuel, citing a safety exception, but NSG members objected so strongly that Russia suspended supply in 2004. Russia may be reconsidering. "Russia to Review Tarapur Fuel Decision" South Asian Media Net, May 10, 2005.

<sup>4</sup> See fact sheet on the NSSP at [<http://www.state.gov/r/pa/prs/ps/2004/36290.htm>].

<sup>5</sup> *Federal Register*, 69 FR 56694, Sept. 22, 2004. Only 4 of the 14 nuclear power plants in India are under safeguards: Rajasthan 1 & 2 and Tarapur 1 & 2.

<sup>6</sup> Joint Statement Between President George W. Bush and Prime Minister Manmohan Singh, White House Press Release, July 18, 2005, Washington, D.C.

and trade with India, including but not limited to expeditious consideration of fuel supplies for safeguarded nuclear reactors at Tarapur.” The United States committed to encouraging its partners to consider this request – a reversal in the U.S. position, which has been to ban fuel to Tarapur – and to consulting with its partners on Indian participation in ITER (collaboration on fusion research) and in the Generation IV International Forum for future reactor design.

The leaders agreed to create a working group, which presumably will negotiate not only the scope of nuclear cooperation, but also Indian commitments to nonproliferation. Prime Minister Singh conveyed that India “ would take on the same responsibilities and practices and acquire the same benefits and advantages as other leading countries with advanced nuclear technology, such as the United States.”<sup>7</sup> India agreed to do the following:

- identify and separate its civilian and military nuclear facilities and programs;
- declare its civilian facilities to the International Atomic Energy Agency (IAEA);
- voluntarily place civilian facilities under IAEA safeguards;
- sign an Additional Protocol for civilian facilities;
- continue its unilateral nuclear test moratorium;
- work with the United States to conclude a Fissile Material Cut Off Treaty (FMCT);
- refrain from transferring enrichment and reprocessing technologies to states that do not have them, as well as support international efforts to limit their spread;
- secure its nuclear materials and technology through comprehensive export control legislation and through harmonization and adherence to Missile Technology Control Regime (MTCR) and NSG guidelines.

These steps are undoubtedly welcome, but some observers believe they are insufficient. Separating civilian and military facilities, placing civilian facilities under IAEA safeguards, and applying an additional protocol are all positive steps, but place India squarely in the company of nuclear weapon states. There are no measures in this global partnership to restrain India’s nuclear weapons program. India has a self-imposed nuclear test moratorium but continues to produce fissile material for its nuclear weapons program, despite support for FMCT negotiations. Few observers are sanguine that FMCT negotiations can proceed quickly in the Conference on Disarmament, even if negotiations do not cover verification, as the Bush Administration prefers.<sup>8</sup>

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<sup>7</sup> July 18 Joint Statement.

<sup>8</sup> In Oct. 2004, Amb. Jackie Sanders explained that finding undeclared fissile material in a state under [full-scope] safeguards” is sufficient to make a judgment of noncompliance.” Under an FMCT, where nuclear weapon states would have undeclared material and activities, “simply finding fissile material...would be insufficient to make a judgment of noncompliance.” “U.S. Warns Verification Focus Would Delay Fissile Ban Treaty,” (continued...)

From a technical verification perspective, the existence of India's nuclear weapons program negates potential nonproliferation assurances that nuclear safeguards on civil facilities might provide. The Administration's position that a fissile material production cutoff is inherently unverifiable because of the existence of unsafeguarded facilities and materials may be at odds with Under Secretary of State Nick Burns' statement to reporters on July 19, 2005 that "this agreement can be verified and will be verified."<sup>9</sup> Further, the negotiation of safeguards agreements will be conducted between India and the IAEA, over whose outcome the United States may have little influence. Nonetheless, the United States must have some assurances that its assistance does not, according to its NPT Article I obligation, "in any way assist, encourage or induce any non-nuclear-weapon state to manufacture nuclear weapons." A significant question is how India, in the absence of full-scope safeguards, can provide adequate confidence that U.S. peaceful nuclear technology will not be diverted to nuclear weapons purposes.<sup>10</sup>

Presumably, when Under Secretary of State Nicholas Burns states that India has an "exceptional" record of nonproliferation, he is referring to India's export control history.<sup>11</sup> Unlike Pakistan, there is little evidence to suggest that India has transferred sensitive nuclear technologies to other non-nuclear-weapon states. Therefore, India's promise to refrain from transferring enrichment and reprocessing technologies to states that do not have them, as well as its promise to adhere to NSG guidelines, may be formalities. Under UNSCR 1540, India is obligated to strengthen its export control legislation; it is unclear what further measures it might be taking pursuant to the global partnership.

## Statutory Requirements for Nuclear Cooperation

The Atomic Energy Act of 1954 (AEA), as amended, governs U.S. nuclear cooperation and exports, among other things.<sup>12</sup> As noted above, the Nuclear Non-Proliferation Act of 1978 (NNPA) amended the AEA, adding nonproliferation criteria for exports. Nuclear cooperation under the AEA includes a wide variety of activities, from the distribution of special nuclear material, source material, and byproduct material, to licensing for commercial, medical, and industrial purposes.<sup>13</sup>

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<sup>8</sup> (...continued)

*Washington File*, Nov. 1, 2004.

<sup>9</sup> Under Secretary of State for Political Affairs Nicholas Burns, "Briefing on the Signing of the Global Partnership Agreement Between the United States and India," July 19, 2005. See [<http://www.state.gov/p/us/rm/2005/49831.htm>].

<sup>10</sup> Plutonium produced in the CIRUS reactor, which the United States supplied with heavy water, reportedly was used in India's "peaceful nuclear explosion." See Victor Gilinsky and Paul Leventhal, "India Cheated," *Washington Post*, June 15, 1998.

<sup>11</sup> Burns, July 19, 2005, briefing.

<sup>12</sup> P.L. 83-703, 42 U.S.C. 2153 and following.

<sup>13</sup> These terms, "special nuclear material," "source material," and "byproduct material," as (continued...)

## Agreements for Cooperation

Section 123 of the AEA (42 USC 2153) requires an agreement for cooperation as a prerequisite for significant nuclear cooperation with any nation; the United States has about 40 agreements for cooperation in place now, and had an agreement with India from 1963 to 1993. There are nine criteria that an agreement must meet unless the President exempts the agreement. The most important of these with respect to India is the full-scope safeguards requirement for non-nuclear weapon states (AEA, Sec. 123(a)(2)).<sup>14</sup> The NNPA stipulates other important requirements: 1) guaranteeing that no transferred items and no special nuclear material produced from transferred items will be used for any nuclear explosive device; 2) guaranteeing physical security; and 3) guaranteeing that no reprocessing or alteration in form or content will take place without prior U.S. consent. The President may exempt an agreement for cooperation from any of the requirements if he determines that the requirement would be “seriously prejudicial to the achievement of U.S. non-proliferation objectives or otherwise jeopardize the common defense and security.” An exempted agreement would not become effective “unless the Congress adopts, and there is enacted, a joint resolution stating that the Congress does favor such agreement.”<sup>15</sup> In other words, both chambers of Congress must approve the agreement if it does not contain all of the Section 123 requirements.

## Export Licensing Authorities

Sections 126, 127, and 128 of the AEA (42 USC 2155, 2156, 2157) cover export licensing procedures. Under Section 126, the NRC would have to license significant nuclear exports in accordance with Sections 127 and 128 of the AEA. Section 127 criteria for exports mirror those in Section 123 for the agreement for cooperation. Section 128 requires the recipient non-nuclear-weapon state to have full-scope safeguards. In addition, the President must judge that the proposed export or exemption will “not be inimical to the common defense and security” or that *any* export of that type would not be inimical to the common defense and security because it lacks significance for nuclear explosive purposes. Additional considerations, if warranted, include whether the license or exemption will materially advance the nonproliferation policy of the United States by encouraging the recipient nation to adhere to the NPT; whether failure to issue the license or grant the exemption would otherwise be seriously prejudicial to U.S. nonproliferation objectives; and whether the recipient nation has agreed to conditions identical to

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<sup>13</sup> (...continued)

well as other terms used in the statute, are defined in 42 USC 2014. Military cooperation is also allowed under the AEA, but this is irrelevant for India.

<sup>14</sup> 42 U.S.C. 2153(a)(2). Sec. 4 (b) of the NNPA specifies that all other terms used in the NNPA not defined in Sec. 4 “shall have the meanings ascribed to them by the 1954 Act, the Energy Reorganization Act of 1974 and the Treaty [NPT].” S.Rept. 95-467 further clarified that under the NPT, the five nuclear weapon states are the U.S., U.K., China, the Soviet Union, and France. *U.S. Code Congressional and Administration News*, 95<sup>th</sup> Cong., 2<sup>nd</sup> Sess., 1978, vol. 3, p. 329.

<sup>15</sup> This new requirement was added by the Export Administration Amendment Act of 1985, P.L. 99-64, Sec. 301 (b) (2), 99 Stat. 120.



those laid out in Section 127. The President may still authorize an export if he “determines that failure to approve an export would be seriously prejudicial to the achievement of U.S. nonproliferation objectives or otherwise jeopardize the common defense and security.” The President would have to submit such a review waiver for each export.

## Termination of Cooperation

Section 129 of the Atomic Energy Act (42 U.S.C. 2158) requires ending exports of nuclear materials and equipment or sensitive nuclear technology to any non-nuclear-weapon state that, after March 10, 1978, detonates a nuclear explosive device; terminates, abrogates or materially violates IAEA safeguards; or engages in activities involving source or special nuclear material and having “direct significance” for the manufacture or acquisition of nuclear explosive devices, and “has failed to take steps which, in the President’s judgment, represent sufficient progress toward terminating such activities.” There is a provision for a presidential waiver “if the President determines that cessation of such exports would be seriously prejudicial to the achievement of United States nonproliferation objectives or otherwise jeopardize the common defense and security.” The President must also submit the 129 waiver to Congress for its review.

## Congressional Role

The July 18 joint statement by President Bush and Prime Minister Singh noted that the two countries would seek “full civil nuclear energy cooperation.” Although the details have not been spelled out, it is clear that the export of nuclear material, reactors, and their major components would require a Section 123 agreement for cooperation. Since India is considered under U.S. law and by the NPT to be a non-nuclear weapon state and does not have full-scope safeguards, the President likely will have to exempt the agreement for cooperation from at least the full-scope safeguards requirement in Sec. 123 a. (2). The agreement must lie before Congress for 60 days of continuous session (once a Nuclear Proliferation Assessment Statement is received).<sup>16</sup> An exempted agreement could only become effective if Congress enacts a joint resolution of approval.

If such an agreement is approved by Congress, the NRC would still have to license nuclear exports under the agreement. Since the U.S.-India agreement would not contain the full-scope safeguards requirement and since India would continue to have a nuclear weapons program, the President would still have to waive the Section 128 requirement for full-scope safeguards and Section 129 provision that would terminate nuclear exports for a non-nuclear-weapon state that, since 1978, has detonated a nuclear explosive device or is conducting nuclear weapons work and has not made sufficient progress toward ending that activity.<sup>17</sup> In both cases, there are

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<sup>16</sup> Specific procedures are found in AEA, P.L. 95-242, Sections 123 and 130.

<sup>17</sup> The provision in Sec. 129 terminating exports for nuclear weapon tests applies in (continued...)

provisions for waivers and for Congressional disapproval. According to some observers, waiving the termination of exports because of a nuclear test may be easier than waiving a termination because of weapons work, since India committed to a voluntary test moratorium after 1998, but not to ending its nuclear weapons program.

## **Impact on Nuclear Nonproliferation Regime**

Some observers have maintained that while the strategic benefits of expanded cooperation with India may be considerable, the nonproliferation costs may outweigh the benefits. U.S.-India nuclear cooperation raises several issues for the international nuclear nonproliferation regime. First and foremost is the basic bargain of the Nuclear Nonproliferation Treaty. In exchange for peaceful nuclear cooperation, non-nuclear-weapon states under the NPT gave up the option of developing nuclear weapons. This bargain was strengthened when nuclear supplier states adopted the requirement for full-scope safeguards for nuclear exports.

The nuclear nonproliferation regime is at a crossroads now, particularly since revelations about Pakistani scientist A.Q. Khan's nuclear black market sales in 2004 prompted the United States, its allies, the IAEA, the G-8, and the NSG to consider further restrictions on sensitive nuclear technologies (e.g., uranium enrichment and plutonium reprocessing). Some NPT members believe that these restrictions contradict the basic bargain of the NPT; other NPT members believe that restricting technologies even further is necessary.

Nonetheless, at a time when the United States has called for all states to strengthen their domestic export control laws and implementation and for tighter multilateral controls, U.S. nuclear cooperation with India would require loosening its own nuclear export legislation, as well as creating an exception to NSG full-scope safeguards requirements. The Administration has not revealed publicly how it will handle NSG guidelines, but consensus among the 44 NSG members is not always assured. Some states may agree that it is time to create a new paradigm for India, while other states, particularly those who have benefitted from the right of peaceful nuclear cooperation under the NPT, may not. Dissent within the NSG could be counterproductive to achieving other objectives the United States is pursuing in nuclear nonproliferation, for example, restricting the fuel cycle, disarming North Korea, and restraining Iran, all of which rely on the considerable support of friends and allies. U.S.-India cooperation could prompt other suppliers, like China, to justify supplying other non-nuclear-weapon states, like Pakistan.

## **Potential Issues for Congress**

Under Secretary of State Nicholas Burns told reporters on July 19, 2005 that the Administration will put a specific program in front of Congress when it returns from

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<sup>17</sup> (...continued)  
situations where nuclear exports have begun.

recess “that would allow the United States to proceed to commit itself to this program of cooperation” with the advice and agreement of Congress.<sup>18</sup> Several questions could arise as Congress considers the Administration’s program:

- How complete are India’s declarations of civilian facilities? What is the level of intrusiveness of the IAEA’s program to inspect those facilities?
- What is the added value of the additional protocol, given the likelihood that nuclear weapon facilities will not be able to be inspected?
- How well is India’s export control implementation functioning?
- What are India’s plans for its nuclear weapons program and what is the possibility that U.S. assistance could benefit that weapons program?
- If India is prepared to take on the responsibilities undertaken by other nuclear weapon states, is it prepared to stop producing fissile material for weapons? Is it prepared to declare some nuclear material as excess to its defense needs and place that material under IAEA safeguards?
- What impact will nuclear safeguards on civilian facilities have on India’s transparency efforts with Pakistan?

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<sup>18</sup> Burns, July 19, 2005 briefing.