

June 20, 2006

Dear Member of Congress:

The Senate Foreign Relations Committee on June 5 finally received an answer from the State Department to the Committee's question: Does the proposed US-India nuclear deal violate the Nuclear Nonproliferation Treaty (NPT)? The question arises because the Article I of the NPT prohibits members "in any way to assist, encourage, or induce any nonnuclear weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices." The NPT defines a non-nuclear weapons state to be any country that did not explode a nuclear device before 1967. This clearly includes India, a state even the Administration has refused to recognize as a weapons state under the NPT.

How would U.S. nuclear aid violate the NPT? Foreign nuclear fuel supplies would free up India's limited domestic nuclear fuel making capacity to produce highly enriched uranium and plutonium for weapons. By the Indian government's own admission, its military and civil nuclear programs are "inextricably" linked, so if we assist one we assist the other. Since the proposed deal also accepts the legitimacy of India's nuclear weapons program, it would effectively encourage India to continue in that direction.

The State Department response predictably claims that the proposed nuclear cooperation arrangement with India would not constitute an NPT violation. But to reach this conclusion the department construes the meaning of the NPT so narrowly as to render it meaningless. The State Department also ignores the reality that partial safeguards in a state with a secret nuclear weapons program are more symbol than substance. India may not have to comply with the NPT, but the United States, as a signatory to the NPT, has a solemn responsibility not only to discourage proliferation by others, but to refrain from assisting other states' nuclear weapons program in any way. The current proposal would breach this central provision of the treaty.

The administration has tried to downplay these points by emphasizing the strategic advantages of partnership with India. Administration officials contend that failure to accede to India on the nuclear issues would threaten the whole arrangement. Yet, India's Foreign Secretary recently acknowledged that the deal may not get by the Congress and this would not affect closer ties with the United States. The main point is that our strategic interest dictates that we should not discard our nonproliferation policy and our Treaty obligations. To do so would only enfeeble our case against NPT violators.

Sincerely,\*

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Victor Gilinsky, energy consultant, former U.S. Nuclear Regulatory Commissioner  
John Holum, former Director of the U.S. Arms Control and Disarmament Agency and  
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## APPENDIX 1

Questions for the Record Submitted to  
Secretary of State Condoleezza Rice by  
Senator Richard Lugar (#20)

Senate Foreign Relations Committee April 5, 2006

Question: Secretary Rice, in November 2005, U/S Joseph stated that "We will also need to ensure that any cooperation is fully consistent with U.S. obligations under the NPT not to 'in any way' assist India's nuclear weapons program, and with provisions of U.S. law." Could you please provide this Committee with a legal analysis that sets forth a detailed examination by the State Department establishing that nothing the Administration is undertaking regarding changes to U.S. law, an exception to the Nuclear Suppliers Group Guidelines for India, or any exports of nuclear material or reactors to India from the United States, or from other nations as a result of U.S. policy and legal changes for India, would in any way assist India's nuclear weapons program or in anyway break U.S. obligations under the NPT?

Answer: Under this Initiative, all nuclear transfers from the United States to India will be subject to IAEA safeguards. These safeguards will be applied to any source or special nuclear material transferred to India and to any source or special nuclear "used in or produced through the use of" material or equipment transferred to India. The application of IAEA safeguards is designed to ensure that U.S.-origin nuclear items remain exclusively on the civil side of the Indian nuclear program and do not in any way contribute to India's military nuclear program. Implementation of an Additional Protocol is designed to give further assurance of this. Under Article I of the NPT, nuclear-weapon states such as the United States undertake, inter alia: ". . . not in any way to assist, encourage, or induce any non-nuclear weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices."

Under Article III(2) of the NPT, all state parties undertake not to provide certain nuclear material and equipment to any non-nuclear weapon state (which includes non-parties) for peaceful purposes unless the nuclear material will be subject to safeguards. The NPT does not treat peaceful nuclear cooperation under safeguards as assisting a non-nuclear weapon state to manufacture nuclear weapons. Specifically, Article III(2) establishes the basis under which NPT parties may engage in nuclear cooperation with safeguarded facilities in countries that are not parties and do not have full-scope safeguards. In The Nuclear Non-Proliferation Treaty (the leading treatise on the negotiation of the NPT), Mohamed Shaker reached the same conclusion: "Almost any kind of international nuclear assistance is potentially useful to a nuclear-weapon program. However, the application of safeguards to all peaceful nuclear assistance to non-nuclear weapon States, as required by Article III, provides a means to establish and clarify the peaceful purposes of most international nuclear assistance."

This conclusion is also supported by the practice of the parties to the NPT. The U.S. and Canada engaged in nuclear cooperation with India before and after the NPT entered into force. The supply of fuel under facility-specific (INFCIRC/66) safeguards agreements was understood to satisfy our obligations under the NPT. Even after India's 1974 detonation, fuel was provided to India's safeguarded Tarapur reactors by the United States, France, and Russia. Such fuel supply was understood to be consistent with the NPT. The Nuclear Suppliers Group did not make the political decision to adopt full-scope safeguards as a condition of supply until 1992, reflecting the fact that nuclear supply to a country without full-scope safeguards was not prohibited under the NPT.

The argument that foreign fuel supply could allow India to devote its domestic uranium substantially or even exclusively to its weapons program, should India so desire, does not change this legal conclusion. As previously noted, nothing in the NPT, its negotiating history, or the practice of the parties supports the notion that fuel supply to safeguarded reactors for peaceful purposes could be construed as "assisting in the manufacture of nuclear weapons" for purposes of Article I. Nuclear material and equipment exported by the U.S. to safeguarded activities would not be involved in any stage of the process of manufacturing nuclear weapons. In essence, nuclear cooperation under safeguards does not fundamentally differ from other forms of energy cooperation (e.g., oil supply, clean coal technology, alternative fuels). All such energy assistance would arguably relieve India of its reliance on domestic uranium for energy production. Yet such energy assistance clearly could not be viewed as assisting India in the manufacture of nuclear weapons.

## APPENDIX 2

### **Analysis of Secretary of State Rice's Answer to Senator Lugar on the U.S.-India Nuclear Deal and Article I of the NPT**

By Christopher Paine and Henry Sokolski

The Senate Foreign Relations Committee posed the question to the Executive Branch: Does the proposed US-India nuclear deal violate the Nuclear Nonproliferation Treaty (NPT)? The question arises because the Article I of the NPT prohibits members "in any way to assist, encourage, or induce any non-nuclear weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices," and Article IX stipulates that, "for the purposes of this Treaty, a nuclear-weapon State is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967." India is not one of these states. Therefore, in implementing Article I, the United States is legally obliged to conduct its peaceful nuclear trade with India with all the care and prudence that it would exercise in carrying out nuclear trade with a non-nuclear weapon state. This is not an impossible bar to get over. It simply means that the United States must propose, and India must accept, measures which ensure that U.S. nuclear fuel and equipment do not in any way assist India in the manufacture of nuclear weapons.

Secretary of State Rice's response to Senator Lugar's question cites the history of U.S. nuclear exports to India under facility-specific safeguards, asserting that "the U.S. and Canada engaged in nuclear cooperation with India before and after the NPT entered into force," and that "the supply of fuel under facility-specific (INFCIRC/66) safeguards agreements was understood to satisfy our obligations under the NPT." This statement is grossly misleading, as India actually violated its safeguards agreements on both the Canadian supplied CIRUS reactor and U.S.-supplied heavy water and used these foreign-supplied items to make the plutonium for its first nuclear bomb. No one now argues that this course of conduct was legal on India's part, and it was precisely the occurrence of these abuses of facility specific safeguards that led to the requirements in U.S. law favoring full-scope safeguards as a condition of supply.

Yet another misleading part of the Secretary's answer to Senator Lugar is her citation of the NPT expert Dr. Shaker that "the application of safeguards to all peaceful nuclear assistance to non-nuclear weapon States, as required by Article III, provides a means to establish and clarify the peaceful purposes of most international nuclear assistance." The Secretary cites this passage in an attempt to argue that sending nuclear goods to a state that does not have all of its nuclear facilities under safeguards but has a nuclear weapons programs in no way violates Article I. Unfortunately, the passage of Dr. Shaker's that the Secretary tries to use is one that actually refers to nuclear aid sent under full-scope safeguards, something the U.S. is not proposing to do with India.

Secretary Rice continues in this vein, asserting, "Even after India's 1974 detonation, fuel was provided to India's safeguarded Tarapur reactors by the United States, France, and

Russia. Such fuel supply was understood to be consistent with the NPT." Actually, hundreds of members of Congress, of both parties, were opposed to continuing the supply of U.S. fuel to the Tarapur reactors precisely because they believed full-scope safeguards in non-weapons states are required to faithfully carry out the U.S. NPT obligation under Article 1. President Carter was only able to send fuel after the 1974 test by Executive Order since the U.S. Nuclear Regulatory Commission refused to approve the exports on nonproliferation grounds. The House overwhelmingly voted in 1980 to block the President from making any further shipments, again on nonproliferation grounds. The Senate allowed the shipment but only by one vote.

Then there is the Secretary's misleading attempt to analogize India's conventional energy imports with the supply of uranium and or enriched uranium fuel. India's proven uranium resources are limited, and so are its enrichment capabilities. While electricity generation fueled by conventional energy imports -- oil and gas -- can in principle replace India's indigenous power reactors fueled with natural uranium, this substitution is limited by India's reactor capacity, currently only about 3000 MW, a small fraction of India's electricity generation and a tiny fraction of its overall energy consumption. Moreover, climate change considerations dictate that any increases in non-nuclear energy imports -- such as natural gas, wind-power, and solar, be devoted to displacing dirty coal-fired power plants, not nuclear plants. Such a perverse substitution would undermine a principle rationale offered for undertaking US-Indian nuclear cooperation in the first place, and therefore amounts to a mere legalistic talking point rather than a description of a real world alternative.

More important, conventional energy supplies obviously cannot substitute for the Separative Work (SWU) component of enriched uranium in future Indian nuclear weapons, such as the highly-enriched components of two-stage thermonuclear weapons. Here the importation of foreign-supplied SWU's, in the form of imported LEU fuel, is critical in relieving India's small centrifuge capability of meeting the fuel requirement for Tarapur and the new Russian-supplied reactors, and for any other large LWR's that the U.S. and other Western vendors might supply in the future. LEU at 5% U-235 represents about 70% of the separative work required to get to weapons grade uranium, so any LEU imports represent a huge potential displacement of future Indian SWU's into the military sector.

Under the proposed agreement, all of India's current and future enrichment could be channeled into the nuclear weapons program, thereby clearly aiding India in the manufacture of higher-yield-to-volume (or yield-to-weight) thermonuclear weapons suitable for long range missile delivery, and violating the U.S. obligation under Article I of the NPT. Highly Enriched Uranium (HEU) components can be traded-off against lithium-deuteride in the secondary thermonuclear stage of nuclear weapons to improve the nuclear yield-to-volume ratio, or substituted for natural uranium components to improve nuclear yield-to-weight. HEU can also be fashioned into narrow diameter and extremely robust gun-type weapons for use in nuclear artillery shells and earth penetrating tactical weapons. Such HEU gun-type weapons can be developed with a high degree of assurance that they will detonate without prior nuclear explosive testing. HEU

metal is a more stable, less radioactive, and easier-to-machine material than plutonium metal, and therefore its use may be preferred in certain types of nuclear weapons or components.

One way to guard against this potential (and foreseeable) U.S. violation of the NPT would be to insist on placing India's uranium enrichment capacity under IAEA peaceful use inspections. This could result in an import dependent civil LEU fuel cycle that the United States could legitimately claim did not free-up SWU's for use in the military sector. India would rely on its domestic sources of uranium and heavy water to feed its plutonium production reactors for weapons, and use imported uranium and LEU to bridge the uranium fuel gap in the civilian sector, thereby creating a meaningful separation of sorts. LEU imports would no longer implicate the military sector, and any foreign suppliers of natural uranium concentrate, such as Australia and Canada, would obviously require that their exports be provided under peaceful use inspections, and any plutonium subsequently produced or separated from this uranium would likewise have to remain under international inspections.

Again, neither imported natural uranium nor LEU are comparable to displacement with non-nuclear fuels. The latter could enable India to expand its nuclear arsenal but *only at the expense* of slower or no growth in its civil nuclear program, while natural uranium and LEU imports would allow India to do both— expand its nuclear weapons arsenal while also enjoying the benefits of peaceful civil nuclear cooperation. – the very outcome that the NPT was devised to prevent.

In previous answers to Congressional questions, the State Department has not denied the possibility that imported nuclear fuel could free-up India's fissile material production capacity, but instead has asserted that “the growth of India's nuclear [bomb] program is evidently not constrained by access to natural uranium.” That assertion is true only as long as India does not bear the burden of meeting its natural uranium feed requirements for LEU fuel enrichment or a vastly expanded power program of the sort India officials are projecting from its domestic uranium resources.

This point is easiest to see in the case of LEU. It takes about 8.5 kilograms of natural uranium feed to produce 1 kilogram of 4.5 % enriched (LEU) fuel, or 8.5 metric tons of natural uranium feed for every ton of LEU, assuming the uranium waste stream (“tails”) contains 0.2 % U-235 (India's centrifuge capability may well be less efficient). A typical initial core loading for a 1000 MW light-water reactor is on the order of 90 tons of LEU, implying a requirement for about 800 tons of natural uranium feed. Alternatively, that same amount of feed could also support production of roughly 4,250 kilograms of 92% enriched weapons-usable uranium, enough to fabricate on the order of 400 twenty-kiloton pure fission implosion weapons. Ongoing LEU refueling requirements (20 tons per reactor/yr) have a natural uranium feed component of 170 metric tons, sufficient to support production of about 90 weapons per year.

A similar tradeoff exists between the natural uranium fuel requirements for India's heavy water reactors operating under safeguards, and production of weapons stockpile

plutonium in similar reactors that are not under safeguards. It has been reported that India only produces 300 tons of domestic natural uranium annually and consumes 450 tons (300 in its power reactors and another 150 tons in its military facilities). India has been making up the difference by relying on stockpiled domestic uranium, which is projected to run out within a year. Clearly, any U.S. export of natural uranium or of LEU to India would be of immediate use to free up India's limited enrichment and natural uranium production capabilities and would necessarily help bolster India's nuclear military potential.

Given this problem, another means by which the United States could help guard against indirectly assisting India's nuclear weapons program through nuclear fuel exports would be to insist that India join the five original nuclear weapon states in halting the production of fissile material for weapons purposes. This could be accomplished through a unilateral India production cutoff, a multilateral fissile production cutoff arrangement, or a global treaty banning fissile material production for weapons purposes.

Why belabor all these points? The Administration claims that the India deal constitutes a new model of how to promote nuclear nonproliferation. It is difficult to see how the India deal can serve this purpose if it violates the NPT's most central provision – not to assist in any way, directly or indirectly, the weapons activities of any state that did not explode a nuclear device prior to the NPT's completion in 1968. Certainly, it would seem fantastic for the Administration to use the same arguments it made in its answer to Senator Lugar to assert that safeguarded nuclear exports to Iran should be viewed as if they were merely the export of oil or gas. The reason why is that until Iran comes clean with the IAEA, it is reasonable to fear that such aid might be of material assistance to a secret parallel Iranian nuclear weapons program, or at a minimum free-up other domestic nuclear resources for use in such a program. The NPT and Nuclear Suppliers Group regimes recognize this problem; the Indian nuclear deal does not.

This deal reduces the US government to the implausible and awkward position of arguing that India should enjoy nuclear cooperation without meaningful conditions and safeguards because its past acts of nuclear deception and defiance have already succeeded in producing an Indian arsenal, while Iran must be denied even the most intensively safeguarded use of enrichment technology for peaceful purposes because its efforts to evade the NPT and international norms have failed to bear fruit. A suit of rules designed to be worn by all can not long endure such egregious custom-tailoring. At a minimum, considerably more must be done to ensure that US nuclear cooperation does not “in any way assist” India in the manufacture of nuclear weapons. If the Executive Branch fails to honor this U.S. NPT obligation, then Congress must do so in its stead.