India, U.S. Agree on Terms for Reprocessing

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India and the United States in late March concluded negotiations on an agreement for the reprocessing of U.S.-origin spent nuclear fuel, removing one of the key remaining barriers to nuclear trade between the two countries.

The two countries issued similar statements March 29, with both characterizing the accord as “an important step” toward implementing their nuclear cooperation agreement, which was signed in July 2007 and entered into force in December 2008. Other hurdles, related to technology transfers and liability limits for companies building nuclear plants in India, still remain.

However, “of all the things that were left, [the reprocessing agreement is] the thing [the Indians] really wanted,” Ted Jones, director of policy advocacy for the U.S.-India Business Council, said in an April 7 interview.

The agreement covers spent fuel that comes from U.S.-supplied fresh fuel or was irradiated in a U.S.-supplied reactor. Such spent fuel is described as “U.S.-origin” or “U.S.-obligated.”

The March agreement is the latest step in a process that began with a joint July 2005 statement by President George W. Bush and Indian Prime Minister Manmohan Singh laying out an approach to easing U.S. and international trade restrictions on India, which is not a party to the nuclear Nonproliferation Treaty (NPT) and conducted nuclear test explosions in 1974 and 1998. In return for its renewed access to the world nuclear market, India agreed to place some of its power reactors under International Atomic Energy Agency (IAEA) safeguards. In separate actions in 2008, the Nuclear Suppliers Group (NSG), which has more than 40 member countries, and the U.S. Congress approved the plan. (See ACT, October 2008.)

The 2007 U.S.-Indian pact, known as a 123 agreement, after the section of the U.S. Atomic Energy Act that requires the United States to negotiate such agreements before doing nuclear business with another country, partially deferred the question of reprocessing by providing for a separate set of talks that would establish the arrangements under which India could reprocess U.S.-obligated spent fuel.

Unlike most U.S. nuclear trading partners, India will not have to seek U.S. consent each time it wants to reprocess U.S.-obligated spent fuel. Instead, it has obtained a broad consent covering the 40-year duration of the 123 agreement.

According to accounts during the negotiations on the 123 agreement, India insisted on such a provision as an indication of its status as an advanced nuclear state. The section of the agreement that covers reprocessing begins by referring to “a commitment to full civil nuclear cooperation” that the two countries have with “other states with advanced nuclear technology.”

Under the 123 agreement, a prerequisite to the long-term consent is that India “establish a new national reprocessing facility dedicated to reprocessing safeguarded nuclear material under IAEA safeguards” and that the parties agree on “arrangements and procedures”—the document on which the two sides recently agreed.
According to sources who were following the negotiations on the reprocessing agreement, a major issue was whether India could have more than one such facility. The agreement says it can, stipulating that the reprocessing “may take place in India at two new national reprocessing facilities.” Sources said the Indians wanted that provision because the two sites designated for U.S. reactors are on opposite sides of the country, at the Mithi Virdi site in Gujarat and the Kovada site in Andhra Pradesh. They argued that having two sites would remove the need to transport spent fuel and plutonium across the country because each U.S. reactor complex would have a reprocessing facility to deal with the spent fuel generated at that site.

In an April 7 interview, a congressional source said that “there is an argument to be made for” allowing two facilities. However, he said, it should be noted that the 123 agreement had to be “redefined” because it refers to “a” reprocessing facility.

Fred McGoldrick, a former Department of State official responsible for negotiating 123 agreements, said the shift from one to two facilities was not a major issue in itself. “The big deal is giving them [long-term] consent in the first place,” he said April 6. The United States is giving a non-NPT country an advantage that Washington has not given to most NPT countries, he said.

He noted that the 123 agreements with Japan and the European Union are the only other ones that allow a country to reprocess spent fuel on its own territory; Switzerland has long-term U.S. consent to bring back plutonium from France and the United Kingdom, where Switzerland sent its spent fuel for reprocessing.

Japan, Switzerland, and the 27 members of the EU are parties to the NPT.

**Suspension Conditions**

Another contentious issue, the sources said, was the terms for suspending reprocessing. According to the March agreement, the “sole grounds” for seeking suspension are “exceptional circumstances limited to” a determination by either party that “continuance of reprocessing of U.S.-obligated material at the Facility would result in a serious threat to the Party’s national security” and a determination that “suspension is an unavoidable measure.”

The parties must “give special consideration to the importance for India of uninterrupted operation of nuclear reactors that provide nuclear energy for peaceful purposes and potential loss to the Indian economy and impact on energy security caused by a suspension,” the agreement says. If there is a suspension and it lasts more than six months, “both Parties shall enter into consultations on compensation for the adverse impact on the Indian economy due to disruption in electricity generation and loss on account of disruption of contractual obligations,” the pact says.

McGoldrick noted the provision requires consultations but does not compel a particular result from the consultations. In particular, it “does not create a U.S. obligation to compensate India,” he said.

The reprocessing agreement does not clearly spell out how its termination provisions relate to those in the 123 agreement. The two sets of termination provisions are “conflicting” and “deliberately made so,” the congressional source said. “Highly informed intelligent people give different opinions,” he said.

However, another observer pointed to a provision of the reprocessing agreement that says, “[I]n the case of any conflict between these Arrangements and Procedures and the Agreement for Cooperation, the terms of the Agreement for Cooperation shall prevail.” Also, he said, some of the questions may be more theoretical than practical. For example, the reprocessing agreement does not specifically say whether it could remain in force if the 123 agreement were suspended. However, the 123 agreement recognizes the right of the country suspending the agreement in response to a violation by the other to require the violator to return any material or other items that had been transferred. By exercising that right under the 123 agreement’s suspension provisions, the United States could halt Indian reprocessing of U.S.-obligated spent fuel, the observer said.

McGoldrick said that although the reprocessing agreement’s suspension criteria are framed
narrowly, they leave the United States with some “wiggle room.” For example, he said, if India conducted a nuclear test explosion, the United States could suspend the consent for reprocessing on the grounds that the test raised questions about the intent of the reprocessing.

Under the Atomic Energy Act, conducting a nuclear test is grounds for terminating nuclear cooperation.

**Supply of Sensitive Technology**

It is not clear where India would acquire reprocessing equipment and technology if it sought foreign assistance for the reprocessing plant. A 2006 U.S. law known as the Hyde Act, which opened the door to nuclear trade with India but also applied certain nonproliferation conditions, generally bans U.S. exports of reprocessing and other sensitive technology to India. Last year, the Group of Eight (G-8) industrialized countries agreed to tighten its export rules and urged the NSG to break a longstanding stalemate on the issue. (See [ACT, September 2009](https://www.armscontrol.org/act/2009_09/Supply-Sensitive-Technology).) The new rules would spell out specific criteria that non-nuclear-weapon states would have to meet to be eligible for sensitive exports related to uranium enrichment and spent fuel reprocessing. One of the criteria is that a recipient of such exports must be an NPT party.

France and Russia, which have active reprocessing industries and are in an intense competition with each other and U.S. companies for nuclear business in India, are members of the G-8 and the NSG.

The March reprocessing agreement is considered a “subsequent arrangement” under the U.S. Atomic Energy Act. Under that law, Congress has 15 days of so-called continuous session to review the arrangement, after which time it goes into effect unless Congress has passed a law blocking it. In the case of India, under a provision in the 2008 law approving the 123 agreement, the review period is 30 days. A U.S. official said in an April 27 e-mail that the departments of State and Energy were preparing the documents that need to be submitted to Congress to start the 30-day clock.

**Other Obstacles**

Still pending between India and the United States is an agreement to meet the requirements of the Hyde Act’s “nuclear export accountability program,” which requires detailed reporting on U.S. nuclear technology exports to India. Jones said India did not have a “model” for its private sector to provide the kinds of assurances that are required, but that the government is preparing regulations to do that.

Meanwhile, India’s ruling coalition in March postponed parliamentary consideration of a bill that would set limits on the liability of companies building nuclear plants in India. Liability protection is particularly important to U.S. companies, which, unlike their French and Russian competitors, are privately owned.

Jones said addressing Indian concerns about liability was likely to be more difficult than finding agreement on the technology-transfer question. Both those issues must be resolved before U.S. companies can complete reactor sales, but once the reprocessing agreement goes into effect, U.S. firms can sell fuel in India, he said.

India had made the reprocessing agreement a prerequisite for any U.S. sales.