Chapter 6

THE POLITICAL, TECHNICAL & LEGAL ASPECTS OF THE DEAL

THE POLITICS OF TARAPUR:

The pulls and pressures that India was subjected to on the Tarapur issue only helped to undergird the political nature of the dispute. The origins of the dispute also lay in patent political considerations: Lured by a soft American credit package, India deviated from its nuclear plans and selected a BWR-type power plant. Since it had no plans, even in the long run, to build a commercial enrichment facility, that decision sowed the seeds of political dependence on external fuel supply.
Tarapur became a powerful political weapon in American hands for use against India in the aftermath of the 1974 Pokharan explosion. The reshaping of the international nonproliferation regime by widening the export control net and adopting policies of technology denial brought India under direct political pressure. That pressure further intensified when the American Congress unilaterally rewrote the rules in the 1978 Nuclear Non-Proliferation Act and in doing so "effectively voided" a 30-year agreement that the United States had signed with India pledging to be Tarapur's exclusive fuel supplier.

The Reagan-Mrs. Gandhi compromise accord on Tarapur was a product of obvious political exigencies and interests. Even the choice of a new surrogate fuel supplier was dictated by political considerations. India's acceptance of France as the new fuel supplier, rejecting a similar supply offer from the Soviet Union, was touted as a "foreign-policy gain" to the United States. The threat of denying India access to U.S. Export-Import Bank and multilateral financial institution credits had been effectively employed to make India accept a new external fuel supplier.

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That represented a success of the "sanctions approach" to proliferation that was developed in the United States in the second half of the 1970s. But those who had believed that the compromise formula worked out in Washington would completely resolve the dispute were later to realize that they were mistaken. In part because of the strong political passions that had been aroused and continuing Indian vulnerabilities over fuel and spare-parts supplies, the compromise settlement could not put a tight lid on the politics of the dispute. India came under renewed political pulls and pressures on two fronts.

1. Fuel supply. Shortly after the deal been announced in Washington, France mounted political pressure on India to accept additional safeguards. It became a "serious political embarrassment when it developed that India [had] not been aware of the stringent safeguards" the French had intended to impose.4 Parliament had been informed that both the United States and India had agreed that French fuel would be received "under IAEA safeguards within the framework of the 1963 Indo-U.S. agreement."5 The Americans had also made clear in their statement that the settlement "envisages the use of French-supplied low enriched uranium at Tarapur while keeping the 1963


agreement ... in effect in all other respects, including provision for IAEA safeguards." Both Indian and American negotiators in Washington had seemed to believe that France would sell the fuel under the same old safeguards set by the United States. James Malone, U.S. assistant secretary of state for oceans and international environmental and scientific affairs, had described the arrangement as "nothing more than a substitution of fuel supply" which did not advance U.S. nonproliferation objectives per se. This impression had been reinforced by visiting French External Relations Minister Claude Cheysson's comment at a New Delhi news conference that his country would require "nothing more than in the present agreement with the Americans." So it came as a big surprise when Cheysson's ministry informed India after his brief visit that France would be unwilling to sell fuel without an Indian


8 At the same time, Cheysson referred to "normal International Atomic Energy Agency safeguards" and did not seem to know the difference between the then prevalent IAEA safeguards system and the more limited safeguards in force at Tarapur. The minister was apparently "less than prepared for the questions on Tarapur," (William Claiborne, "India Rejects Conditions on A-Plant Fuel," International Herald-Tribune, September 1, 1982; also Indian Express [New Delhi], "No Special Conditions for French N-Fuel: Cheysson's Assurance to India," August 9, 1982.)
acceptance of tough new safeguards. Mrs. Gandhi's government reacted strongly to the French demands, refusing to receive a technical team from the French nuclear fuel supply organization, COGEMA. Instead, France was asked to send a high-powered delegation to straighten out the political conditions of the deal. India contended that France, as a surrogate fuel supplier, had no right to impose new conditions beyond the scope of the 1963 agreement.

The Indo-French safeguards impasse not only put the U.S.-Indian compromise settlement in jeopardy, but it threatened to take on the shape of a political scandal in India, with opposition politicians and newspapers criticizing the government for mismanaging the Tarapur deal and demanding that it be scrapped. This criticism was also fuelled by revelations that the government accepted the deal despite a recommendation by the Department of Atomic Energy to dissolve the 1963 agreement and

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take the mixed-oxide route.\textsuperscript{12} Writhing in embarrassment, the
government (which had hailed the compromise settlement as a
personal triumph of Mrs. Gandhi) adopted a tough line with the
French in the negotiations but provided few details in public,
sparking angry media protests.\textsuperscript{13} The compromise had run aground
before it could be formalized and, as far as India was concerned, it seemed the situation had relapsed to square one.

In essence, what the French demanded was a separate
agreement between India and the IAEA stipulating that French fuel
for Tarapur was to be leased by India\textsuperscript{14} and explicitly
incorporating two key safeguards provisions\textsuperscript{15} required by the
Nuclear Suppliers Group:

\begin{itemize}
  \item[(i)] \textbf{The perpetuity clause.} This would have required
India to permit outside inspection of the Tarapur
reactors and the spent fuel produced there even after
the scheduled expiry of the Indo-U.S. agreement for
\end{itemize}

\textsuperscript{12} This recommendation was in a written report submitted by
Homi N. Sethna, the DAE chief, to the government after the collapse
of the third round of Indo-U.S. negotiations in November, 1981.

\textsuperscript{13} See, for example, H.K. Dua, "Government Keeps Silence on
Tarapur Faux Pas," \textit{Indian Express} (New Delhi), September 2, 1982;
\textit{Times of India} (New Delhi), "Queries about French N-Supply Remain
Queries," September 2, 1982; and \textit{Telegraph} (Calcutta), "Bid to

\textsuperscript{14} In other words, France would hold exclusive title to the
spent fuel of French origin.

\textsuperscript{15} Warren H. Donnelly and Neile L. Miller, \textit{Nuclear Exports:
Termination of U.S. Nuclear Cooperation with India}, Congressional
Research Service issue brief, No. IB81087, Archived -- June 23,
cooperation in 1993 — in other words, the acceptance of safeguards in perpetuity. This was to be in line with the concept developed by the IAEA Board of Governors (Gov/1621) that once safeguards attach to nuclear facilities and materials they should continue to apply — irrespective of the duration of the agreement that initiated such safeguards — to such facilities and materials as well as to the irradiated fuel so long as they remain capable of being used for military or explosive purposes. This concept was designed to apply to all safeguards agreements with non-parties to the NPT. Ironically, France had joined India in firmly opposing the IAEA Board's move on perpetual safeguards in 1973. But after India's PNE it changed its mind and supported this requirement.  

16 International Atomic Energy Agency Board of Governors, Document GOV/1621 of August 20, 1973. The decision to implement GOV/1621 in all future safeguards agreements was taken at the Board's meeting on February 13, 1974. The meeting, however, decided that "if the State or States concerned in the negotiation of any such agreement considered that there were exceptional reasons justifying departure from those concepts, the Director-General, when presenting the draft agreement to the Board, should specify the articles on which it had not been possible to reach agreement."

17 This concept of perpetual safeguards was developed by the IAEA Board of Governors in response to a West German power reactor sale to Argentina with a five-year safeguards agreement. (Charles N. Van Doren, Nuclear Supply and Non-Proliferation: The IAEA Committee on Assurances of Supply, Congressional Research Service report, No. 83-202S [Washington, D.C.: Library of Congress, October, 1983], pp. 61, 73.)

18 France had also supported India's objections to the establishment of the NPT in 1968.
along with other sweeping measures during the secret parleys of the London suppliers' club that began in 1975.

(ii) **The pursuit clause.** This would have triggered safeguards at any other facility where nuclear materials from Tarapur were used. For example, if plutonium reprocessed from the Tarapur spent fuel was used in an Indian breeder plant, that facility would automatically come under international inspection. This concept calls for safeguards "pursuing" or chasing by-products wherever they go. And it is embodied in the London Group's guidelines presented to the IAEA.¹⁹

The French sought to draw a parallel between their demand and India's 1977 acceptance of stringent IAEA safeguards on the Rajasthan Atomic Power Plant after Canada broke off nuclear cooperation, forcing India to buy badly-needed heavy water from the Soviet Union.²⁰ That agreement incorporates both the pursuit and perpetuity provisions as had been demanded by the Soviet Union, also a member of the London Group. Significantly, those tough provisions were imposed by the Soviets even before the


²⁰ For a discussion of the Indian import of Soviet heavy water, see Gloria Duffy, "Soviet Nuclear Exports," International Security (Summer, 1978), pp. 83-111. However, Duffy's interpretation of the Soviet-imposed accord as applying indefinite safeguards to all Indian reactors is pretty loose. The other unsafeguarded reactors would come under safeguards only if they used RAPS byproducts.
suppliers’ group made public its new nuclear export conditions by formally presenting the guidelines to the IAEA.\(^{21}\)

On the duration of safeguards, the 1977 agreement says that they will remain in force until the heavy water supplied and the two RAPS reactors are "no longer usable for any nuclear activity relevant from the point of view of safeguards."\(^{22}\) It embodies the concept of pursuit by requiring safeguards on all "subsequent generations of special fissionable material."\(^{23}\) Unlike the Indo-U.S. agreement for cooperation or the similar Canadian-Indian agreement (also signed in 1963), the strictly-worded safeguards agreement in regard to Soviet heavy water contains an explicit no-explosive-use pledge.\(^{24}\) Prime Minister Morarji Desai’s government, which signed the safeguards agreement after coming under considerable Soviet pressure, avoided the agreement from actually coming into effect by declining to use the supplied

\(^{21}\) Those guidelines were presented to the IAEA and made public in February, 1978. (See Chapter 2 of this study.)

\(^{22}\) International Atomic Energy Agency, Vienna, "The Text of the Agreement of 17 November, 1977, Between the Agency and India for the Application of Safeguards in Connection with the Supply of Heavy Water from the Union of Soviet Socialist Republics," INFCIRC/260 of July, 1978, Section 11, (b) (ii) and (c).

\(^{23}\) Ibid., Section 2 (c) and (d), and Section 3.

\(^{24}\) Ibid., Section 2: "India undertakes that none of the following items shall be used for the manufacture of any nuclear weapon or to further any other military purpose and that such items shall be used exclusively for peaceful purposes and shall not be used for the manufacture of any nuclear explosive device..."
heavy water. However, after Indira Gandhi returned to power, "a much more pessimistic appraisal of the Indian heavy water programme" prompted her government to accept more Soviet heavy water under the agreement and commission RAPS's second unit, completed years ago, in late 1981.

The French argued that like in the case of Soviet heavy water supply to RAPS, India was accepting a new external supplier of nuclear material for Tarapur. And France, as a member of the Nuclear Suppliers Group, had to insist on the same conditions that the Soviets had imposed on India in 1977. The French had a point. India contended that the concepts of pursuit and perpetuity were unknown when the Tarapur agreement was signed in 1963 and that since France was to act merely as a surrogate supplier on behalf of the Americans it could not reshape the original terms of the agreement. But the skeleton in India's cupboard -- the RAPS safeguards accord -- seemed to undermine the strength of this argument. Clearly, France's about-face on safeguards after the initial willingness to sell fuel on the old terms was clearly intended to exploit India's meek acceptance of Soviet conditions in the past and the desperate Indian need at

25 Before the agreement was signed, 55 tonnes of heavy water had already been shipped in 1976 on the condition that India would conclude a safeguards pact before actually using the heavy water. (Nuclear Engineering International, "Heavy Water Moderates India's Path to Independence," July, 1981, pp. 26-27.)

that time for enriched uranium fuel for Tarapur.

Once bitten, twice shy -- that seemed to sum up India's reaction to the French demands. Not inclined to fall into the same safeguards trap a second time, India played tough on this occasion. The United States was told that if France continued to insist on a new safeguards arrangement, the deal with the Americans on Tarapur would have to be called off.\(^{27}\) And India would then have no option but to run Tarapur on its own mixed-oxide fuel.\(^{28}\) Indo-French negotiations to help break the impasse collapsed over India's flat refusal to budge from its position.\(^{29}\) India appeared determined not to compromise on the issue of perpetual safeguards. However, India's acceptance of pursuit safeguards had been somewhat obviated -- at least during the life of the 1963 agreement -- by its self-imposed restriction on use of Tarapur byproducts. In a letter delivered by India in the aftermath of the 1974 PNE, the Americans had been assured that "the special nuclear that has been or is hereafter made available for, or used, or produced in the Tarapur Atomic Power Station

\(^{27}\) Nucleonics Week, "India Signals Tough Stand in Negotiations with France on Tarapur," August 26, 1982.

\(^{28}\) That threat may have put some American pressure on France to soften its stance. The Washington Post (September 1, 1982) quoted diplomatic sources as saying that the U.S. government had warned France that if it did not work out a fuel supply arrangement with New Delhi, India would abrogate the 1963 agreement and lift safeguards on the spent fuel.

located at Tarapur will be devoted exclusively to the needs of that Station unless our two Governments hereafter specifically agree that such material be used for other purposes."\textsuperscript{30}

[Emphasis added.] India had thus explicitly ruled out the use of reprocessed fissile material from Tarapur in another facility at least until the agreement for cooperation remained in force. The only option India had retained was the possible reprocessing of the spent fuel into plutonium for use in mixed-oxide fuel for Tarapur. But since that assurance was given within the timeframe of the agreement for cooperation, the Indian self-clamped restriction was to end with the expiry of the accord in 1993. The French were initially not content with such a limited and indirect acceptance of the concept of pursuit; they wanted safeguards to chase all subsequent generations of fissile materials. But they knew the perpetuity clause was the heart of the matter because it would keep Tarapur byproducts always under safeguards.

Ultimately, as in the earlier conflicts on Tarapur, pure and simple political expediency helped to find a way out. France had signed a memorandum of understanding with India on the sale of 40

\textsuperscript{30} Letter of September 17, 1974, from Homi N. Sethna to Dixy Lee Ray in Appendix F. America's diplomatic note of November 30, 1982, to India had made clear that the Indian assurance would remain in effect even after the French takeover of U.S. fuel supply obligations under the agreement for cooperation.
Mirage 2000 fighter-jets and negotiations had been underway to finalize the 800-million-dollar deal before French President Francois Mitterrand’s scheduled visit to New Delhi in November, 1982. France also wanted to sell Matra air-to-air and Milan anti-tank missiles, Puma helicopters and advanced avionics technology; in addition, it was bidding for multimillion-dollar telecommunications and other industrial contracts in India. Mitterrand had carefully built a close relationship with New Delhi since he came to power in 1981, and he believed Tarapur should not come in the way of the expanding French economic and military ties with India. Eager to resolve the impasse quickly so that he could "pursue lucrative arms contracts as well as deals for transfer of technology," Mitterrand intervened personally in the negotiations. France, suddenly, dropped its demands for stricter safeguards, "arguing that the NSG guidelines were not applicable to an existing agreement that predated

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33 William Claiborne, "India Greets Mitterand After A-Pact Signed," Washington Post, November 28, 1982. France did bag the Mirage and other important arms sale contracts. The value of the Mirage deal was, however, reduced to about $300 million after India abandoned plans to assemble and produce under licence a further 110 Mirage 2000 aircraft. (Smith and George, "Defence of India," and Shekhar Gupta, "India's Defence Policy," Asian Wall Street Journal, October 8, 1986.)

34 Ibid.
them." On November 26, 1982, the two countries signed a short agreement under which France took over as Tarapur's fuel supplier "within the framework" of the 1963 agreement for cooperation. This was followed by a commercial agreement between the state-owned COGEMA of France and the Indian government. The first French fuel consignment arrived in May, 1983. The supply agreement received considerable flak from European Commission officials, who complained France had ignored European Community rules that required Paris to first ask the Commission's approval of the deal and obtain the co-signature of the EEC supply agency. The accord was also criticized by some in the U.S. Congress, who argued that the substitution of fuel suppliers appeared to circumvent Congress's statutory right to review changes in nuclear cooperation agreements.

It has been argued in the West that India, with some bluff

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35 Donnelly and Miller, *Nuclear Exports*, p. 7.

36 The agreement was signed around midnight, hours before Mitterrand arrived in New Delhi. For full text of the agreement, see Appendix O.


38 Associated Press, Brussels-datelined report, December 2, 1982. In response to the French-Indian agreement, the European Commission made proposals to strengthen its regulations and prevent a similar supply contract being signed by a member state in future.

and bluster, managed to clinch a very favourable deal.\footnote{See, for example, Peter A. Clausen, "Nonproliferation Illusions: Tarapur in Retrospect," Orbis (Fall, 1983), pp. 741-752.} It found a way to get the much-needed fuel for Tarapur on its own terms.\footnote{Nucleonics Week, "New Tarapur Accord Allows Reprocessing, But U.S. Hopes India Will Refrain," August 5, 1982, p. 6. (Also, Wall Street Journal, "The Tarapur Treadmill" [editorial], December 7, 1982, which said Mrs. Gandhi had been allowed to "have her yellowcake and eat it too.")} According to this argument, India knew it could not carry out the threat of freeing itself from the shackles of the agreement for cooperation because its own mixed-oxide capability was suspect and, as the past experience on RAPS had shown, it would not have found another external supplier on the old terms set by the Americans and Canadians in their 1963 agreements for cooperation. Nevertheless, it successfully employed that threat to its advantage. On the other hand, it has been contended by some in India that New Delhi sacrificed indigenous mixed-oxide technology for a political settlement containing a number of "hidden risks".\footnote{See, for example, Hindu (International Edition), "Problems and Hidden Risks in Tarapur Accord," December 11, 1982.} The government's action had let down the DAE scientists who believed they could run Tarapur with their own reprocessed plutonium-uranium oxide mixed fuel,\footnote{According to Raja Ramanna, "even today if any fuel for Tarapur does not come, we will have the MOX (mixed-oxide) fuel ready." (Interviewed in Frontline, September 21-October 4, 1985, p. 17.)} it has been argued. The rival claims and assertions, however, do not detract from the fact that the Tarapur deal has been beneficial to both
sides. India has received fuel without accepting any new conditions, and the Americans have managed to retain IAEA safeguards over Tarapur. The deal, however, does not bode peace for the future because it did not explicitly resolve a number of issues.

(2) Replacement parts. A major issue left unresolved in the U.S.-Indian compromise settlement was the supply of replacement parts for Tarapur. The United States has argued that it did "not have a contractual obligation" to sell spare parts, a contention strongly rejected by India. The export of replacement parts for Tarapur became an important political lever for use against India after the loss of the fuel "weapon". In the heated U.S. congressional debates of 1980, there had been practically no opposition to the export of spare parts. In fact, congressional opponents of President Carter's order approving seven export licences for fuel and replacement parts only wanted the two fuel shipments to be blocked. But in 1983 the proposed sale of some badly-needed component parts for the Tarapur reactors that had developed serious radiation leaks became a

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44 Statement of William Miller, spokesman of the U.S. Embassy in New Delhi, quoted in International Herald-Tribune, May 13, 1983.

45 M.R. Srinivasan, the then director of DAE's power projects engineering division, said: "We believe that the supplier country has an obligation to the recipient." (Nucleonics Week, February 24, 1983, p. 4.)

46 See, for example, the "Dear Colleague" from John Glenn and five other senators to members of the Senate, in Appendix M.
major political issue, with influential members of Congress joining media commentators and public-interest groups in opposing the exports. The issue also threatened to push Congress into a political collision with the Reagan Administration.

India had for long been seeking water pumps, valves, neutron sensing devices and other vital replacement parts for Tarapur but had received no response from Washington despite indications that the reactors were in serious disrepair. After the French takeover of U.S. fuel supply obligations, the U.S. Administration tried to use the spare parts issue to extract a concession from India that it would not reprocess the Tarapur spent fuel without prior U.S. consent. As the American political pressure increased, so did the radiation hazards at Tarapur. The reactors became so contaminated that maintenance workers were reportedly "receive the permissible fortnightly dose of radiation in only 30 seconds." Sethna said the reluctance of the United States to sell essential spare parts, including radiation-monitoring components, was "a matter of concern" but the safety of workers

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47 Nucleonics Week, February 24, 1983, p. 4.

48 Nucleonics Week, July 2, 1981, p. 3. Several of the export licence applications were filed as far back as 1980.


was not in danger.\textsuperscript{51} It was reported that a lack of some of the needed parts, such as water pumps and neutron flux monitors, might have contributed to a brief shutdown of one of the two reactors. As the radiation problems of Tarapur started receiving public attention, U.S. government-inspired leaks about Indian "preparations" for another nuclear explosion appeared in the press.\textsuperscript{52} The "preparations" had prompted the White House to delay approval of the requested component parts, it was claimed. Such information leaks, however, appeared to be linked to the U.S. pressure on India to accept the American position on reprocessing rights.

After months of acrimonious debate between the two countries, the Reagan Administration intervened to help defuse the conflict over replacement parts and remove a "major irritant" in Indo-U.S. relations. Secretary of State George P. Shultz, during a visit to India, announced that the United States was "prepared to take the necessary actions to supply those parts which are not available from elsewhere."\textsuperscript{53} Shultz implicitly


\textsuperscript{52} See, for example, Milton R. Benjamin, "U.S. Is Delaying Nuclear Exports to India," \textit{Washington Post}, June 23, 1983. The report quoted unidentified sources as claiming India had sunk additional shafts at Pokharan in preparation for another test. The report was immediately dismissed as false by the Indian government.

proposed a third-party supply arrangement on spare parts similar to the one on fuel. India was asked to look for replacement parts in Europe, but if all the spares were not available there, the Administration was prepared to use a presidential waiver of nonproliferation legislation to supply the remainder parts. It was hoped that India would be able to buy from third parties all the components whose U.S. export required fullscope safeguards in the recipient country. The Nuclear Non-Proliferation Act categorized two sets of nuclear items attracting different sets of export conditions: (i) fullscope safeguards and other stringent controls for components and parts attached to reactor vessels, equipment controlling the power output of the core, and primary cooling system components; (ii) IAEA safeguards, no-explosive-use pledge and prior U.S. consent rights for retransfer -- but no fullscope inspections -- for a number of other parts and components. The Administration wanted India to buy items in the United States from the second category, thus obviating a presidential waiver. It realized that a presidential waiver would spark a royal battle in Congress, although the President's authority had been considerably strengthened by a Supreme Court decision invalidating congressional disapproval of executive


55 Under Section 126 of the 1954 Atomic Energy Act as amended by the NNPA.

56 Under AEA Section 109.
orders without presidential veto power. It was believed that India could be sold some of the needed parts by cannibalizing two ageing General Electric reactors in West Germany and Italy, one of which had already been shut down and the other was in the process of being decommissioned.

As had been expected, Shultz's announcement triggered an uproar inside and outside Congress. The main theme of the criticism was how could the Administration "cave in" to the Indian demands without extracting any concessions. Critics implicitly argued that the spare parts issue had to be used as a powerful lever. "It was not only a gift but a giveaway: it undid the United States' main leverage over a country that has already exploded one atomic device by flouting nuclear safeguards and apparently intends to do it again," said one newspaper. Thundered another: "'We are satisfied' with the new arrangements, the Indians said. They bloody well ought to be. Once again they have advanced their independent nuclear programme without suffering the indignity or inconvenience of accommodating to either American or international standards."


59 Washington Post, "Caving In to India" (editorial), July 3, 1983.
Senator Rudy Boschwitz, chairman of the Senate Foreign Relations Subcommittee on the Near East and South Asia, demanded that the Administration join other supplier nations in jointly embargoing sale of "parts to the Indians until they: 1) make it clear that they are not planning another nuclear test and 2) accept fullscope IAEA safeguards."^60 NRC Commissioner Victor Gilinsky wrote: "We are talking about a spent fuel stockpile currently containing a couple of hundred bombs' worth of plutonium with which the Indians have been blackmailing us for years ... Nothing stands out so much in the history of U.S.-Indian nuclear relations as India's consistency of approach and purpose and America's short-term outlook and self-deception about Indian intentions."^61 The view that short-term bilateral considerations were overriding U.S. nonproliferation policy was echoed by Boschwitz and several others on the Capitol Hill. One congressional source was quoted as saying: "The directive came out of Shultz office -- we've got to get the Indians out of the Soviet camp. That's what this thing is really about."^62

More than 50 members of Congress wrote to Reagan to urge him


"in the strongest terms" not to undercut U.S. nonproliferation goals by exporting the replacement parts to India.\(^\text{63}\) They were joined in the criticism of the proposed exports by a number of influential senators. A joint resolution, non-binding and advisory in character, was introduced in both the Senate and the House of Representatives calling on the Administration to seek its pound of flesh from India. According to the resolution, the United States should not export or arrange third-party sale of parts to India unless: (i) it receives "reliable assurances by the Government of India that it is not engaged in a programme to develop nuclear weapons and will not explode additional nuclear devices;" and (ii) India agrees to "extend the safeguards provisions in the U.S.-Indian nuclear cooperation agreement in perpetuity."\(^\text{64}\) Senator Glenn wrote to Reagan that though the Administration had cited safety and public health concerns in deciding to export the parts, the condition of Tarapur reactors was so bad that new components would make no difference. "Nuclear experts in your administration have told my staff that the Tarapur reactors are, from the standpoint of safety ... much worse than the worst operating plants in the U.S. ... I have been told that if these reactors had been operating in the U.S., the NRC would have closed them down years ago."\(^\text{65}\) NRC's made its own

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\(^\text{63}\) Donnelly and Eberhard, U.S. Nuclear Exports to India, p. 9.

\(^\text{64}\) Manning, "Cloud over Tarapur," p. 38.

\(^\text{65}\) Glenn's letter to the President quoted in Manning, "Cloud Over Tarapur," p. 39.
contribution to the debate but spoke in two voices. It said a General Electric representative's site visit had determined that Tarapur was "running well and being run well despite their [Indians] supply problems." But at the same time it reported that an "adequate supply of spare parts would appear to be critical to the safe operation of the [Tarapur] units." 67

A Senate attempt to overturn the Shultz commitment was derailed by Congressman Stephen Solarz in the House-Senate conference on the Foreign Relations Authorization Act for fiscal year 1984-85. 68 The Senate had adopted a Boschwitz-sponsored amendment which in effect blocked the sale of nuclear items to India and South Africa without each country embracing comprehensive safeguards. Solarz, however, played a pivotal role in having the conference change the language of the amendment to endorse the export of safety-related equipment for Tarapur. 69 India, meanwhile, had explored the possibilities of buying old parts from the two European General Electric reactors similar to Tarapur -- Gundremmingen in West Germany and the Italian Garigliano. Garigliano was still in the process of being

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66 NRC's Memorandum of August 23, 1983, quoted in Donnelly and Eberhard, U.S. Nuclear Exports to India, p. 3.

67 Ibid.


69 Ibid.
decommissioned, and India had been told to wait. With West Germany, India signed a memorandum of understanding in 1984 to buy parts from Gundremmingen, a Siemens subsidiary-owned plant that had been shut down in 1976. But even the purchase of cannibalized parts of dubious quality spurred a safeguards controversy of low intensity between India and West Germany; the controversy, however, ended quickly.

India's vulnerability to outside political manipulations and pressure over the continued operation of Tarapur was again highlighted by an aborted attempt in 1989-90 to buy a safety-related device in the United States. The device in question was a rod worth minimizer (RWM), a 200,000-dollar computer-guided system used by reactor operators to guide and monitor the proper sequences for the withdrawal and insertion of control rods. The unresolved spare parts issue in the 1982 U.S.-Indian compromise settlement seemed to undermine the safe operation of Tarapur. The company which applied for authorization to sell the RWM to India, the Maryland-based Singer Link-Miles Simulation Corporation, reported that Tarapur operators had "bypassed" the important safety system in their plant because the original RWM

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70 Nucleonics Week, August 4, 1983, p. 5.

"never properly functioned."

The firm said that although the overall U.S. policy was not to assist Indian nuclear activities, it was submitting the application "on the grounds of humanitarian concerns for international environmental protection" in the spirit of the Tokyo economic summit conference statement on the 1986 Chernobyl accident. In that conference, the United States had joined other major Western economic nations in emphasizing the importance of international cooperation in improving the safety of nuclear facilities.

Groups and individuals in Washington who had waged mighty battles over Tarapur in the past, only to be left aggrieved by U.S.-sponsored third-party supply arrangements, seized on this opportunity to block the sale of RWM and embarrass the Indian and U.S. governments. A classified Department of Energy (DOE) review of the Singer application was leaked to the media apparently by an official in the NRC or another government

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72 Application of September 28, 1989, from John E. Cormier, Director, Simulations Programmes, Singer Link-Miles Simulation Corporation to John M. Rooney, Director, Department of Energy's Technology Policy Division, for the Secretary of Energy's specific authorization to sell a rod worth minimizer to India, p. 2. Copy of the application obtained by the author.

73 Ibid., p. 5.

74 Document of December 14, 1989, signed by John M. Rooney, Director, Technology Policy Division, Office of Classification and Technology Policy, Department of Energy, along with the DOE Staff Analysis of the export application, in Appendix P.
agency. The DOE had forwarded its report to other executive branch agencies for their views but had made it known that if the State Department concurred with its conclusion, it would ask the Energy Secretary to approve the Singer application. According to the report:

"DOE staff does not believe the security interests of the United States would be adversely affected if the Singer requested assistance were authorized. The RWM would be specifically designed for the Tarapur nuclear reactor, which is under IAEA safeguards. The control configuration and sensor points are fixed and peculiar to Tarapur and the RWM could not be installed on another Indian nuclear power plant without major redesign. Also, the PC [computer] accompanying the RWM would have a PDR [processing date rate] of 78, which is within the limit of U.S. computers exported to India under DOC [Department of Commerce] distribution licence."  

The DOE analysis said "there presumably would be a political benefit to the United States" if the export of a system designed to enhance Tarapur’s safe operation was "treated as an exception to the U.S. policy of not assisting the Indian nuclear programme." It also noted the proposed export was "consistent with the U.S. post-Chernobyl policy for reactor safety-related assistance." The Department cautioned that the United States

75 Based on the author's personal interviews with DOE officials.  
76 Ibid., p. 2 of Rooney's letter and p. 3 of DOE analysis.  
77 Ibid., p. 3 of DOE analysis.  
78 Ibid., p. 2 of DOE analysis.  
79 Ibid., p. 1 of Rooney's letter.
"could be vulnerable to serious international criticism were an accident to occur at Tarapur that could be linked to U.S. refusal to supply a safety-related system." 80

The opponents of the proposed export saw the DOE analysis as a dangerous move to change the longstanding U.S. policy of not permitting American firms to sell nuclear-related items to India. 81 The critics argued that if India wanted safety equipment, it should accept fullscope inspections as required by U.S. nonproliferation law, but if it refused to meet the U.S. export conditions, it had the option of shutting down Tarapur. The opponents, obviously interested in NRC hearings on the case, challenged the DOE's right to authorize the export without a formal NRC review of the application. Amid signs that the issue would rake up another major political controversy over Tarapur, the Indian government of Prime Minister V.P. Singh decided to abort the purchase bid. By then it had became known that the matter would have to go before the NRC, as had been demanded by the critics.

The failure to sort out the spare parts issue in the 1982 Tarapur deal meant that India, if it did not want to face a political squeeze each time it tried to buy components, would

80 Ibid., p. 1 of Ronney's letter.

have to operate Tarapur in conditions less than satisfactory by international standards. The bypassing of an important safety system, as revealed by Singer, reflected the Indian predicament. That failure also meant that Indian nuclear engineers would have no choice but to recondition some worn-out Tarapur items and try to locally manufacture some others. For instance, the Department of Atomic Energy had to wait for so long for a feedwater sparger to replace a cracked unit in Tarapur that it eventually decided to make the item itself.\textsuperscript{82}

\textbf{TECHNICAL ISSUES:

The U.S.-Indian failure to politically resolve the question of reprocessing rights has had important technical implications for spent fuel storage at Tarapur. India had repeatedly asserted its right to reprocess the irradiated fuel without seeking prior U.S. consent. But despite official statements over a period of more than one decade that such reprocessing would begin in order to overcome storage problems,\textsuperscript{83} India has not exercised that "right". And it is unlikely to do so before the agreement for cooperation expires on October 24, 1993.

\textsuperscript{82} M.R. Srinivasan's statement in Nucleonics Week, February 24, 1983, p. 4.

\textsuperscript{83} For example, Sethna announced in July, 1983, after the Shultz commitment on spare parts that such reprocessing may begin by the end of the year. (Manning, "Cloud over Tarapur," p. 39.)
Both the United States and India had agreed before signing that accord that the Tarapur spent fuel would be reprocessed in India. The construction of the Tarapur reprocessing facility (PREFRE), in fact, began only after its design was approved by the U.S. Atomic Energy Commission in 1968.\textsuperscript{84} The Commission declared that PREFRE's design "permits effective application of the safeguards arrangements provided for in Article VI" of the agreement for cooperation.\textsuperscript{85} It also noted that before the joint determination contemplated in the agreement was made, "we would expect to be able to confirm during visits to the plant that the measuring and control procedures to be used are such that the provisions of Article VI may be effectively applied."\textsuperscript{86} The plant, based on the Purex flowsheet process with mechanical chopping of fuel,\textsuperscript{87} was completed in 1976,\textsuperscript{88} but no such promised visits were made. After lying idle for nearly five years, the

\textsuperscript{84} Letter of October 18, 1968, from Myron B. Kratzer, Division of International Affairs, United States Atomic Energy Commission, to N. Srinivasan, Bhabha Atomic Research Centre. Copy of the letter obtained by the author.

\textsuperscript{85} Ibid.

\textsuperscript{86} Ibid.


100-tonne per year PREFRE began reprocessing RAPS spent fuel. PREFRE, however, was built adjacent to the Tarapur plant to facilitate easy reprocessing of TAPS irradiated fuel. The U.S. refusal to carry out a joint determination of PREFRE's safeguardability has raised three related technical issues on the spent fuel.

1. Secure storage of spent fuel. The highly radioactive spent fuel has been accumulating for more than two decades, although the original storage capacity was for about five years of Tarapur's operation. Spent fuel management at Tarapur has encountered a number of technical challenges. After removal from the reactor, the Tarapur spent fuel assemblies, like in any other light-water reactor, are stored in a water-cooled stainless steel-lined pool. Since burned-up fuel remains radioactive for tens of thousands of years, it demands very careful handling and safe storage with accident protection barriers. Tarapur’s storage capacity has been progressively increased over the past 15 years after overcoming some of the technical challenges. Because "reprocessing has always been assumed to be the next step in the fuel cycle, virtually no consideration" had been given in

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89 See, for example, Milton R. Benjamin, "Plutonium Reprocessing: The Step the U.S. is Most Eager to Block," Washington Post, December 5, 1978.

the West to the long-term, secure storage of irradiated fuel.\textsuperscript{91} This was borne out by the design problems that were faced during the first expansion of the Tarapur storage pool capacity in 1978.\textsuperscript{92} A design concept developed by General Electric for building interim high-density racks was found not to be viable, and the company was asked by the U.S. Department of Energy to suggest a new concept.\textsuperscript{93} The progressive augmentation of the Tarapur storage pool with high-density stainless steel racks reached the maximum attainable capacity in 1985, forcing the Indian Department of Atomic Energy to order the construction of a new storage facility away from the plant.\textsuperscript{94} But until the new facility became ready, dry casks were built indigenously as a stop-gap measure to store some of the spent fuel.\textsuperscript{95} After the expiry of the agreement for cooperation, a political decision would have to be taken to relieve storage difficulties by commercially recycling the discharged fuel.


\textsuperscript{93} Ibid., Bastin's memorandum, p. 3.


\textsuperscript{95} Ibid., p. 2.3.
2. Sale of spent fuel to the United States. Another way of alleviating storage difficulties would have been to sell some of the spent fuel to the United States, which under the 1963 agreement has the "first option" to purchase such fuel which is in excess of the need of the Indian civilian nuclear programme. The United States is bound by a pledge to use spent fuel purchased from India for peaceful purposes only and to place it under IAEA safeguards.96 The technical and economic issues of spent fuel transportation were cited by the Carter Administration in rejecting the idea of buying back the fuel burned in Tarapur reactors.97 But after blanket authorizations were given by the Reagan Administration to Japan and Western Europe to reprocess U.S.-origin spent fuel, large quantities of irradiated fuel and reprocessed plutonium are being commercially shipped, at times over long distances across the globe. The buy-back of Tarapur fuel has been the demand of many of the opponents of U.S. nuclear exports to India.98 India could sell either the spent fuel (which will have to be shipped in giant protective casks) or, at a higher price, the plutonium extracted from it (which will have to be shipped under tight security wraps). With six other

96 Article VIII (A) of the 1963 agreement, in Appendix B.

97 For a discussion of the issues relating to spent fuel transportation and management, see Frederick Williams and David Deese (eds.), Nuclear Proliferation: The Spent Fuel Problem (New York: Pergamon, 1979).

98 See, for example, NRC Commissioner Victor Gilinsky's statement in NuclearFuel, May 11, 1981, p. 11: "The only safe way out of the mess is to get all the spent fuel back."
commercial power reactors in operation, and another six under construction, India does not need the Tarapur spent fuel for its breeder programme or its civil plutonium economy;\(^99\) India's stocks of separated plutonium are projected to rise sharply in the next few years with the completion of another reprocessing plant at Kalpakkam and the growing availability of unsafeguarded burned-up fuel.\(^{100}\) However, with the scheduled expiry of the 1963 agreement almost round the corner, there is little reason why India should be eager to discuss such an idea with the United States.

3. Is Tarapur's spent fuel a proliferation risk? In the debates over Tarapur, a deliberate impression was sought to be created by a number of American writers and lawmakers that the irradiated fuel was bomb-grade material and, therefore, constituted a major proliferation risk. It was claimed India could make a large number of nuclear weapons by extracting the

\(^{99}\) See, for example, Raja Ramanna's interview with Frontline, September 21-October 4, 1985, p. 17. On the question of the Indian nuclear programme's need for Tarapur spent fuel, he said: "Tarapur? I'm afraid for our fuel cycle and programme, we no longer take into account safeguarded reactors. We've got our own systems coming on line..."

\(^{100}\) See, for example, interview of M.R. Srinivasan, the then chairman of the Atomic Energy Commission, with New York Times, May 7, 1988. According to Srinivasan, the country's stockpile of separated plutonium outside the scope of IAEA safeguards is expected to be thousands of kilograms by 1998.
plutonium from the fuel. "Bomb" was the favourite word of those who harped on this theme: editorial writers used it probably more than other any word in their headlines on Tarapur and senators and congressmen employed it to stir public passions on the subject. This theme would be echoed again if controversy flares anew in 1993, as may seem likely, when the agreement for cooperation expires. There is little technical evidence, however, to back up the claims about the Tarapur spent fuel stockpile containing bomb-grade plutonium.

Commercial reactors that run on low-enriched uranium (LEU) fuels produce inferior grade plutonium; their spent fuel has a high concentration of plutonium-240 not suitable for fabricating nuclear weapons. The few studies that actually attempt to support the claim of bomb-grade material at Tarapur do so on

101 See, for example, Gary Milhollin, "Stopping the Indian Bomb," American Journal of International Law, Vol. 81, No. 3 (July, 1987), p. 594; Victor Gilinsky, "Why Keep Helping India Make the Bomb?", Wall Street Journal, July 5, 1983; and John H. Glenn Jr., "No Fuel for Tarapur," Washington Post, September 22, 1980. Milhollin claims Tarapur would "give India about 1,800 kilograms of completely unrestricted plutonium, enough for 225 atomic bombs." According to Gilinsky, for whom Milhollin had prepared a special report on Tarapur, "We are talking about a spent fuel stockpile currently containing a couple of hundred bombs' worth of plutonium with which the Indians have been blackmauling us for years." In one of the NRC rulings on the Tarapur case, Gilinsky also accused India of "holding hostage" the spent fuel from which he claimed India could extract more than one tonne of plutonium for use in explosives. (U.S. Nuclear Regulatory Commission, Memorandum and Order of May 16, 1980, signed by Samuel J. Chilk, Secretary of the Commission, in the matter of Edlow International Company, Agent for the Government of India, "Separate Opinion of Commissioner Gilinsky").
specious theoretical assumptions: it is argued that India has frequently operated Tarapur at low fuel irradiation and therefore plutonium with a lower concentration of undesirable isotopes should have been produced. The arguments on low average burnup also contain allegations that Indians could have intentionally lowered the burnup through a number of technical strategems such as premature withdrawal of fuel bundles from the reactor and removal of some cooling system water to increase steam fraction. Implicit in those arguments is the claim that India may have deliberately operated Tarapur in an uneconomic fashion in order to achieve lower fuel burnup; no plausible explanation however is given as to why India would run a safeguarded plant in that manner. The operating record of Tarapur, however, has been no worse than the performance of other General Electric BWRs of similar vintage elsewhere in the world.

Tarapur's irradiated fuel, like that of any other LEU-fuelled reactor, does probably contain unevenly burned bundles and rods and low-burnup ends that might yield better grade


103 Wohlstetter, "Shall We Let India Separate Spent Fuel?", pp. II-1 to II-5.

104 Wohlstetter, "Shall We Let India Separate Spent Fuel?", p. II-4.
plutonium through scavenging, but the technical tasks of that are formidable. No nation has yet built a nuclear explosive by scavenging such material, though theoretically it might be possible. But even if a bomb were fashioned that way, its value would be worthless for purposes of nuclear deterrence because the weapon intrinsically would not be reliable. Its yield, though theoretically higher than that of a conventional explosive, would be "uncertain" in practical terms. Further, there is no reason why India, with its large stocks of unsafeguarded plutonium, including weapons-grade plutonium from a high-flux research reactor like Dhruva, would like to use the Tarapur plutonium for military purposes. In fact, no country has ever employed material derived from commercial nuclear power reactors to manufacture its first nuclear explosives. The only practical value of the Tarapur spent fuel for India would be its

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106 The theoretical possibilities of misuse of LEU burned fuels (as well as spent fuel from other commercial reactors) have been exaggerated by a number of nonproliferation specialists. See, for example, the section "Nuclear Power and Proliferation of Nuclear Weapons," in Keeny (ed.), Nuclear Power Issues and Choices, pp. 271-300, and Albert Wohlstetter, Swords from Plowshares: The Military Potential of Civilian Nuclear Energy (Chicago: University of Chicago Press, 1977). But for a nation interested in acquiring weapons-usable fissile materials, the technologically simplest and fastest route is to build dedicated production facilities.


availability for recycling as reactor fuel. This conclusion is fully backed by a major U.S. congressional study which states that the recoverable plutonium in the spent fuel "is of commercial rather than weapons grade... It would seem unlikely that plutonium from Tarapur would wind up in nuclear explosives, although it might be used to free higher quality plutonium from other uses for this purpose." 109

It seems that the main purpose of raising the "bomb" scare over the Tarapur spent fuel was extraneous to the issues of the U.S.-Indian agreement for cooperation. The real motive was to draw attention to the weapons potential of the Indian nuclear programme in general -- in other words, to make Tarapur a symbol of India's unbridled plutonium production capability. As one important senator admitted, the "real Indian threat" was not the Tarapur fuel reprocessing issue but "the lack of safeguards at its other facilities," or more specifically, the fact that it retained "access to thousands of kilograms of unsafeguarded plutonium (potentially representing hundreds of bombs) that will be produced at its other nuclear facilities in the next few years." 110 This point was underlined by a Senate Foreign

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110 Glenn, "No Fuel for Tarapur."
Relations Committee report, which said that by "way of comparison" with India's unsafeguarded plutonium production capability, the Tarapur burned-up fuel contained only a small amount of plutonium. Clearly, politics clouded even the technical issues and judgements. For instance, a report prepared for the U.S. administration concluded: "Safeguards cannot be 'effectively applied' to recycling in India. This key prerequisite for our approval -- stated in the Agreement for Cooperation -- cannot be fulfilled by any practicable accounting and inspection system applied to the Tarapur separation plant or to other critical points in a fuel cycle that involves manufacturing plutonium dioxide fuel and recycling it in the Tarapur reactors. This judgement interprets 'effective application' of safeguards to mean assuring early detection, warning, and the possibility of counteraction before nuclear weapons are assembled." This report provided no explanation as to how in 1968 the United States judged PREFRE's design as permitting the effective application of safeguards. Nor did the report consider the U.S. technical assistance that had been provided in building PREFRE. After 1974, earlier U.S.


112 Wohlstetter, "Shall We Let India Separate Spent Fuel?", Summary.

113 Wohlstetter's arguments were similar to those that were advanced in another 1976 report that he and his associates produced for the U.S. Arms Control and Disarmament Agency. (See, Albert
commitments and promises on Tarapur did not seem to matter much to those involved in policy formulation in Washington.

LEGAL ISSUES:

The Tarapur controversies over the years raised some major issues of contention under international law. The 1982 U.S.-Indian compromise settlement did not resolve all the points of dispute. The language of the Indo-French fuel supply agreement reflected the feeling of at least one party that some issues still needed to be sorted out. According to the accord, "During the life of the 1963 agreement, France and India shall consult with a view to agreeing on the arrangements to ensure the implementation as may be necessary of the provisions" of their supply agreement.\textsuperscript{114}

That, according to French President François Mitterrand's public

\textsuperscript{114} See text of the agreement in Appendix O.
interpretation, meant discussions to settle differences on the key issue of safeguards after October, 1993.\textsuperscript{115} India's position on the issue has been clear: no safeguards after the expiry of the agreement for cooperation. And unless it needs an external source of supply for Tarapur after 1993,\textsuperscript{116} there is little incentive for it to even discuss this subject. The one unresolved issue that has indeed hurt India and affected the operating conditions at Tarapur has been the question of replacement parts. But that experience, which has left Tarapur in a state of permanent disrepair, and the immense U.S. political pressure India has had to face over the years in keeping Tarapur running, may only force New Delhi to order the decommissioning of the Tarapur reactors after 1993.

The legal framework for Indo-U.S. nuclear cooperation was provided by the 1963 agreement. But after India's PNE, this framework came under a severe strain. U.S. legal interpretations of the agreement changed gradually as the international nonproliferation system was overhauled to incorporate a new stringent exports regime based on technology denial. India did not sue the United States in the International Court of Justice when Washington enacted the Nuclear Non-Proliferation Act and effectively voided some of the key provisions of the 1963

\textsuperscript{115} Hindu, "Problems and Hidden Risks in Tarapur Accord" (editorial), December 11, 1982.

\textsuperscript{116} The presumed 25-year operating life of Tarapur would end in 1994.
agreement. According to the 1969 Vienna Convention on the Law of Treaties, a party cannot invoke the provisions of its domestic law as a justification for not honouring its commitments under a treaty.\(^{117}\) India has maintained that the 1963 agreement has "the force of a treaty as both governments completed the necessary constitutional procedures."\(^{118}\) The United States has publicly never said the agreement does not have the force of a bilateral treaty as defined by the Vienna Convention. But, privately, U.S. officials claim that the agreement has less than the force of a treaty, although not denying that it is a binding, international pact.\(^{119}\) However, an internal U.S. government document shows that the agreement is assumed to be a bilateral treaty.\(^{120}\)

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Article 27 states: "A party may not invoke the provisions of its internal law as justification for its failure to perform a treaty. This rule is without prejudice to Article 46."

Article 46 states: "A state may not invoke the fact that its consent to be bound by a treaty has been expressed in violation of ... its internal law regarding competence to conclude treaties as invalidating its consent unless that violation was manifest and concerned a rule of its internal law of fundamental importance. A violation is manifest if it would be objectively evident to any state conducting itself in the matter in accordance with normal practice and in good faith."

Another relevant provision is Article 62, which says: "A fundamental change of circumstances ... may not be invoked as a ground for terminating ... the treaty unless the existence of those circumstances constituted an essential basis of the consent of the parties to be bound by the treaty..."


\(^{119}\) Based on personal interviews in Washington.

The U.S. government has generally been coy in presenting the legal merits of its Tarapur case (implicitly acknowledging its infirmities) and has clearly preferred to deal with the dispute in political terms on a political level. But some influential elements in the administration and Congress have tried to build the official U.S. legal case; the unilateral change of the terms of the agreement through domestic legislation is justified by pointing to the language of the 1971 amendment to the fuel contract. In that contract agreement, India agreed to "procure all necessary permits or licences ... and comply with all applicable laws, regulations and ordinances of the United States and of any state" in connection with the supply arrangements under the 1963 agreement.\textsuperscript{121} It has also been pointed out that when that amendment to the 1966 contract was signed, India would have known a new set of published U.S. Atomic Energy Commission export licensing regulations barring exports if they were "inimical to the interests of the United States." Therefore, by signing that amendment, India in effect gave the United States a discretionary right to veto any licence application, it is claimed. The same thesis also argues that India thereby agreed

\textsuperscript{121} See Contract of Sale of Enriched Uranium between the United States Atomic Energy Commission acting on behalf of the Government of the United States States of America and the Government of India, along with the 1971 Amendment, in Appendix C.
in advance to comply with any future changes in U.S. law.\textsuperscript{122} In other words, India was lawfully bound to open its entire nuclear programme to outside inspection after the NNPA required it do so as a condition for buying fuel and spare parts. It has generally been assumed that India was the injured party and that it probably had a right to demand reparations from the United States for failure to honour its commitments under an international agreement.\textsuperscript{123} But that American thesis stretches its arguments in a novel way to contend that actually the United States was the aggrieved party in international law "because of India's refusal to live up to its undertaking to comply with applicable U.S. legal requirements." According to it:

"As such, India may be the Party in actual or potential breach of the agreement and in ordinary circumstances cannot walk away from the bargain previously struck. Generally, the election to abandon a contractual obligation upon the occasion of a material breach is available only to injured Party. There is [however] no obligation on the injured Party to make such an election and it may waive the breach and accept or insist on performance [of agreement] after such breach of the contract. The United States, accordingly, may continue to regard the existing agreement and contract as effective and seek to persuade India that it stands ready and willing to meet its obligation to supply India's fuel requirements when the latter indicates its willingness to stand by its contractual obligation to

\textsuperscript{122} American Law Division, Congressional Research Service, Library of Congress, Washington, D.C., in its 1980 study of the Legal Obligations of the United States and India under the 1963 Agreement for Cooperation argues that "the NNPA and its fullscope [inspections] requirement is such a law and by prior mutual consent of the Parties becomes a material element of the contract between them."

\textsuperscript{123} See, for example, article by K.N. Rao, Director of the Indian Society of International Law, in \textit{National Herald}, July 13, 1981.
comply with U.S. legal requirements, including the NNPA's provision for the adoption of fullscope safeguards and inspection of its nuclear facilities."

This thesis, embraced by a number of American officials, lawmakers and academics, however is fundamentally flawed. It conveniently overlooks the fact that the agreement for cooperation explicitly governs the fuel contract and, as a matter of law, the agreement's basic obligations and rights cannot be bargained away by a subservient commercial contract. The agreement for cooperation did specify that fuel for Tarapur would be sold "in accordance with terms, conditions and delivery schedules set forth" in the commercial contract. But Article XV of the contract states unequivocally: "In the event of incompatibility between this Contract and the Agreement for Cooperation, the latter shall govern." The 1971 amendment was a routine change in a commercial contract to meet the demands of a new law requiring India to take title to the fuel while still in the United States rather than at the port of loading as had been the case in 1966. The amendment was made under a provision of the contract which stipulates that in case of a domestic law

124 This analysis of the American Law Division, Congressional Research Service, was heavily relied upon by the Senate Foreign Relations Committee when it voted 8 to 7 in 1980 to block fuel shipments to Tarapur. "The Committee believes this analysis provides strong support for the position that the United States will not be in violation of the Agreement or the fuel contract by refusing the present shipments." (U.S. Senate, Tarapur Nuclear Fuel Export, p. 20.)

125 Article XV of the 1966 fuel contract.
change, the two parties would "consult with each other to
determine the modifications, if any, required" in the contract,
but that nothing contained in the article "shall affect the
obligation" of the United States to sell fuel to India and of
India to buy the fuel exclusively from America. The amendment itself makes clear that nothing contained in it "shall
affect the terms and conditions" of the contract. The thesis,
however, did not win support from the State Department, whose
attorneys told a Senate committee that the argument "misconstrues
the provisions in question and the context in which they were
negotiated."

According to the Department, "a change in the
basic obligations of the 1963 agreement would have required an
amendment to that agreement itself, and could not be accomplished
in a subordinate and subsidiary contract."

The long delays experienced by India in receiving U.S. fuel export licences during the period 1975-82 also raised a legal
question whether such delays could constitute a breach of the agreement. According to the Vienna Convention, a "material
breach of a bilateral treaty by one of the parties entitles the other to invoke the breach as a ground for terminating the treaty

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126 Article XI of the 1966 fuel contract.
127 Amendment to the contract, see Appendix C.
129 Ibid., p. 31.
or suspending its operation in whole or in part."\(^{130}\) This is what India had threatened to do. A material breach is defined as "the violation of a provision essential to the accomplishment of the object or purpose of the treaty."\(^{131}\) The fuel supply arrangement was an essential feature of the agreement for cooperation.\(^{132}\) India originally used to buy fuel for Tarapur on demand; later, on American insistence, a delivery schedule drawn up on the basis of a report by two U.S. specialists was accepted by New Delhi in September 1976.\(^{133}\) The agreement for cooperation obligates the United States to "sell to the Government of India ... as needed, all requirements of the Government of India for enriched uranium" fuel for Tarapur.\(^{134}\) [Emphasis added.] After a delivery schedule was worked out, "all requirements" of India came within an accepted, legally-binding timetable. Opponents of fuel exports, however, argued that shipments could be delayed for a limited period of time without breaching U.S. obligations because the schedule was drawn up to sustain the normal operation of the Hyderabad-based Nuclear Fuel Complex, which converts the imported uranium into fuel rods for Tarapur, rather than of Tarapur itself. This view was accepted by the Senate Foreign Relations

\(^{130}\) Article 60 of the Vienna Convention.

\(^{131}\) Ibid.

\(^{132}\) Young, "Tarapur," p. 4.


\(^{134}\) Article II (A) of the Agreement for Cooperation.
Committee, which pointed out that the 1963 agreement did not mention the Hyderabad facility and only required the United States to supply Tarapur. But then delays in shipments stretched even beyond the delivery schedules recommended by NRC studies to keep Tarapur reactors running at 70 per cent efficiency. One of the two fuel shipments approved by Congress in 1980 was never delivered by the Reagan Administration. Consequently, Tarapur's operation was badly affected. If one were to ignore the delays in licensing exports, and merely go by the arguments accepted by the Senate committee in 1980, it appears that the United States may have breached its contractual obligations by not delivering one shipment, as had been required by the jointly agreed schedule, before France was brought in as a new fuel supplier. If a legal course had been adopted, India could have, among other matters, sued the United States for damages over the loss of production at Tarapur. The U.S. refusal to supply further fuel could have also been used by India to invoke the doctrine of rebus sic stantibus and argue that the agreement had ceased to be binding because its essential conditions had been changed. Or it could have taken recourse to the doctrine of ex consensu advenit vinculum "that no state shall be bound by any new obligation to which it refuses consent."  

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135 U.S. Senate, Tarapur Nuclear Fuel Export, p. 20.


137 Young, "Tarapur," p. 3.
Since the United States and France interpret the provisions of the 1963 agreement differently than India, there is still considerable potential for legal conflict. However, the Americans and French are probably on weak ground because they tried to make India agree to a different set of conditions for a new fuel supply arrangement, but then having failed, they still concluded a settlement with New Delhi. The settlement was motivated by an American desire to maintain nonproliferation controls over Tarapur and "retain a line of influence with the Indians to discuss other nonproliferation matters."\(^{138}\) Although obvious political considerations influenced U.S. and French decisions on the matter, France also sought to retain such a line of influence with India when it had a paragraph inserted in the November, 1982, agreement saying both countries would hold discussions on the issues relating to the accord. It may be precisely this desire to maintain a line of discussion on nonproliferation matters that has prompted the two countries to claim certain rights that find no explicit support in the 1963 agreement or their own compromise settlement with New Delhi. Three fundamental questions have been raised.

1. Can the United States transfer its basic obligations to a third party but retain the rights under the 1963 agreement? The

\(^{138}\) State Department official quoted in Donnelly and Miller, Nuclear Exports: Termination of Cooperation, p. 7.
agreement for cooperation explicitly ties rights of both parties to their obligations. In the 1982 compromise, India waived its right to require that the United States supply the fuel, and similarly the United States waived its right to require India to use only American fuel at Tarapur. Did the new arrangement constitute a "novation" in law by fundamentally altering the previous arrangement or did the United States merely "delegate" its basic obligations on fuel supply to another party but remained one of the two primary parties in the original agreement? \(^{139}\) The United States claimed the new arrangement had changed little. The Reagan Administration told Congress that it did "not view the U.S.-India exchange of notes as amending the U.S.-India agreement for cooperation, or creating a 'new' agreement..." \(^{140}\) It said the agreement for cooperation would "remain in effect in all other respects and need not be amended." \(^{141}\) However, some in Congress viewed the compromise arrangement as a "back-door" amendment of the agreement that should have been reviewed by Congress under section 123 of the 1954 Atomic Energy Act. \(^{142}\) The brevity of the U.S.-Indian

\(^{139}\) This is discussed in detail in Milhollin, *Tarapur: A Brief for the United States*, pp. 32-34.

\(^{140}\) Donnelly and Miller, *Nuclear Exports: Termination of Cooperation*, p. 9.


\(^{142}\) Donnelly and Miller, *Nuclear Exports: Termination of Cooperation*, p. 9.
exchange of diplomatic notes as well as of the Indo-French accord leaves room for legal conflict over rights and obligations. If the new arrangement is a novation in law, the United States cannot retain the rights that are tied to its obligations under the agreement for cooperation; but if the United States is specifically the delegor and France the delegee in the new arrangement, America would retain its rights.

The legal position, however, is obscured by two elements. (i) The diplomatic notes say each side has agreed to waive the duty of the other; neither country says it has agreed to allow the other side to delegate its duty to an outside party.\(^{143}\) Further, in the French-Indian accord, France states it has agreed to supply fuel "in lieu" of the United States, rather than as a delegee of USA.\(^{144}\) (ii) A delegation of duty would have required the United States to bring in France as a supplier within the framework of the 1966 fuel contract; in other words, France should have taken the U.S. place in the contract through an amendment of the contract. Instead, France signed a separate commercial contract with India,\(^{145}\) effectively voiding the terms and conditions of the 1966 contract and establishing a new set of commercial sale-purchase conditions.

\(^{143}\) This is contrary to what Milhollin argues in Tarapur: A Brief for the United States, p. 33.

\(^{144}\) Indo-French Agreement of November 26, 1982, in Appendix O.

\(^{145}\) The signing of the commercial contract was announced by Mrs. Gandhi on March 24, 1983.
2. Does the United States have prior consent rights over Indian reprocessing of the Tarapur spent fuel? Assuming that the United States does retain its rights under the 1963 agreement, it would mean that, basically, it controls the right to approve reprocessing, to maintain safeguards, and to insist upon peaceful use. But how do those rights square with the 1980 U.S. suspension of the trilateral safeguards agreement relating to Tarapur in favor of a bilateral safeguards agreement between the IAEA and India? The bilateral safeguards agreement transfers U.S. safeguards rights under Article VI of the agreement for cooperation to the IAEA. The U.S. approval rights on reprocessing are enshrined in the 1963 agreement this way: "It is agreed that when any special nuclear material utilized in the Tarapur Atomic Power Station requires reprocessing, ... such reprocessing may be performed in Indian facilities upon a joint determination of the Parties that the provisions of Article VI of this Agreement may be effectively applied, or in such other facilities as may be mutually agreed." Does the U.S. transfer to the IAEA of its safeguards rights under Article VI make inoperative its right to a joint determination? And even if it maintains the right to a joint determination, does that right

146 Milhollin, Tarapur: A Brief for the United States, p. 33.


148 Article II (E) of the Agreement for Cooperation.
amount to a veto power to block Indian reprocessing as Washington has claimed? In other words, can the United States refuse to carry out a joint determination, as it has consistently done so?

According to an official U.S. statement after the 1982 compromise was announced, "It is clear that there must be a joint determination and the United States has not agreed to such a determination or delegated the authority to agree to such a determination. No reprocessing of Tarapur spent fuel in India may this occur without United States agreement, which has not been given."\(^{149}\) The United States has also made it known that it intends to indefinitely retain a veto over what India does with the spent fuel.\(^{150}\) No explanation, however, has been provided as to how the United States can claim a legal right to block Indian reprocessing, or why it has never consented to a joint determination of the safeguardability of PREFRE despite having stamped its seal of approval on the facility's design in 1968. Instead, disdain has been heaped on the agreement of cooperation. "Our Agreement with India was drawn loosely enough, and India wanted to make it evasive and evadable enough so that no unique interpretation is possible."\(^{151}\) Warped technical arguments based

\(^{149}\) Statement of Assistant Secretary of State Veliotes, Jul 29, 1982 (cited in an earlier footnote).


\(^{151}\) Wohlstetter, "Shall We Let India Separate Spent Fuel?", in the sub-section suggestively titled, "Interpreting the Ambiguities in Our Favour," p. III-1.
on a worst-case scenario have been propounded to express lack of confidence in IAEA's ability to effectively apply safeguards to Indian reprocessing. These arguments centre on the capability of the agency's inspection and accounting system to provide "timely warning" of plutonium diversion.\(^\text{152}\) If the U.S. had any legal fig-leaf as a protective cover for those technical arguments, it was blown away by IAEA's safeguarding of PREFRE in 1980 after the agency concluded that effective safeguards could indeed be applied.\(^\text{153}\) Since then, India has been reprocessing spent fuel from another safeguarded power plant -- RAPS -- at PREFRE, but the United States has nevertheless chosen to block Tarapur fuel reprocessing by refusing to participate in a joint determination.

India's position has been that it has a right to reprocess

\(^{152}\) Ibid., pp. III-1/III-6. Wohlstetter's arguments have apparently influenced the U.S. government decision not to allow Tarapur fuel reprocessing. They have also been bought wholesale by Milhollin in "Stopping the Indian Bomb," and Tarapur: A Brief for the United States.

Wohlstetter's arguments precede on the basis that India is determined to cheat on plutonium extraction. To permit reprocessing would mean "the Indians would be able to derive large stocks of Pu-239 of any degree of purity they want and separate it in the form of plutonium nitrate (which is five days away from [Pu] metal, and insertion in the core of a bomb). They could, in fact, legally put it in the form of metal itself. If one accepts all of the Indian interpretation, including the PNE loophole, they can insert the metal in implosion systems and explode them." (p. III-2)

the Tarapur spent fuel "without further consultation"\textsuperscript{154} and that the U.S. claim of a veto right "makes no difference"\textsuperscript{155} to it. India owns the spent fuel and it can reprocess it at any time in view of the safeguards agreement on PREPRE with the IAEA, it has been stated. India sought a joint determination only "because of our interest in maintaining good relations with the U.S." although "it is not necessary from a legal point of view."\textsuperscript{156} However, because of obvious foreign policy considerations, India has refrained from enforcing what it sees as its legal right to reprocess.

India's legal position on the issue is strengthened by the provisions of the 1963 agreement which permit it to recycle plutonium and uranium recovered from the spent fuel as reactor fuel for Tarapur\textsuperscript{157} and also for use "in its programme for the peaceful uses of atomic energy."\textsuperscript{158} (The wider use of reprocessed fissile material in the nuclear power programme was, however, blocked by India's subsequent, self-imposed restriction to use

\textsuperscript{154} Press Information Bureau, New Delhi, "Debate on No-Confidence Motion: Prime Minister's Speech of August 17," Official Transcript, August 19, 1982, p. 6.

\textsuperscript{155} Prime Minister Indira Gandhi's remark in the Lok Sabha quoted in Times of India (New Delhi), "PM Denies Sell-Out on N-Fuel Reprocessing," August 12, 1982.


\textsuperscript{157} Article II (A) of the Agreement for Cooperation.

\textsuperscript{158} Article II (F) of the Agreement for Cooperation.
the Tarapur by-products exclusively for "the needs of that station". The recycle of the spent fuel was implicitly envisaged by the agreement, and the United States can claim no lawful discretionary power to hold up reprocessing. Indeed, by having refused to permit reprocessing, it may have made itself vulnerable to possible legal action for recovery of the costs of spent fuel storage as well as damages for denying Tarapur reprocessed fissile material fuel. At current international prices, the commercial value of fissile material recoverable from the Tarapur spent fuel will be, by a conservative estimate, well over $100 million.

3. Can the United States or France claim rights in perpetuity? According to India, "nothing survives" in terms of rights and obligations when the agreement for cooperation ends in October, 1993. This position has been repeatedly stated by India. In contrast, the "United States position is, and has always been, that these provisions by their very nature continue so long as the material or equipment remains useable for any

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159 Letter of September 17, 1974, from Homi N. Sethna to Dixy Lee Ray, in Appendix F.

160 This estimate has been worked out by the author on the basis of the figures provided by U.S. officials during the Tarapur debates on the amount of recoverable fissile material. This figure, however, is not a net profit estimate because reprocessing costs -- which are likely to be substantial -- have not been subtracted.

161 Press Information Bureau, New Delhi, Prime Minister's Speech of August 17, 1982, p. 6.
nuclear activity relevant from the point of view of safeguards and under the jurisdiction or control of the recipient country, irrespective of whether the agreement for cooperation is suspended or terminated for any reason. Such a duration is fundamental to and inherent in cooperation for peaceful nuclear purposes.  

162 Article X of the agreement says the pact "shall remain in force for a period of 30 years" and there is nothing in the accord that explicitly or implicitly suggests that the rights and obligations continue beyond the expiry date. The duration of the agreement was designed to be conterminous with the presumed useful life of the Tarapur reactors. Therefore, since the fuel supply needs of the station were to be over by 1993, the mutual rights and obligations of the parties were also to end with the expiry of that arrangement. India, in fact, pitchforked into the agreement its own condition for embracing safeguards by stating that safeguards would be a quid pro quo for an assured fuel supply -- in other words, it was accepting safeguards over the reactors and providing peaceful-use assurances only because of the fuel supply arrangement.  

163 The United States, therefore, has a pretty weak case when it argues that safeguards should continue indefinitely after the fuel supply arrangement has ended. Firstly, there is no evidence that it ever presented such an argument during the first half of the 30-year life of the

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162 Statement of Assistant Secretary of State Nicholas A. Veliotes, July 29, 1982 (cited in an earlier footnote).

163 Article VI (A) in the Agreement for Cooperation.
agreement. Secondly, the concepts of perpetuity and pursuit were unknown when the agreement was signed. France, indeed, justified its fuel supply arrangement bereft of pursuit and perpetuity provisions by arguing that the London club guidelines were not applicable to an agreement that predated them. Although France tried to leave some room for discussions on safeguards by inserting a paragraph into the supply accord, it seems unlikely that India would seriously be interested in such talks.

After being subjected to political pulls and pressures for more than 17 years over Tarapur, India for a change can sit tight. The dependence on outside supplies — the source of international pressure — will end shortly in 1993. India has a strong legal case, and it needs to do nothing. If the United States and France wish to enforce their interpretations on India, they have the option to go to the International Court of Justice, though that seems unlikely in view of the fact that the United States has always fought shy of presenting the legal merits of

164 In fact, the history of the Tarapur dispute shows that the first time the United States officially informed India that it interpreted safeguards to be in perpetuity was in 1981 during the negotiations to break the deadlock over Tarapur. Prior to that there is no official record of such a claim having been made. During the NRC and congressional hearings on Tarapur during the Carter Administration, there is record of lawmakers and NRC commissioners voicing concern over the limited duration of the agreement but no government assertion that such concern was misplaced because safeguards were perpetual.

165 Donnelly and Miller, Nuclear Exports: Termination of Cooperation, p. 9.
its case. But if the preference is for the path of political pressure and influence, they will have to look for other Indian vulnerabilities or for technological, military and economic levers.¹⁶⁶

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¹⁶⁶ The use of such levers is advocated by the London club's sanctions regime and is an important ingredient in U.S. nonproliferation policy since the Reagan years. According to American scholars, specific steps that could be initiated to bring India "around to the U.S. view" include controlling Indian access to the U.S. high-technology market, a squeeze on bilateral aid and on multilateral financial institution lending, restrictions on American commercial bank loans, denial of most-favoured-nation treatment in trading, and imposition of countervailing customs duties on Indian goods. However, it is acknowledged that Indian vulnerabilities are pretty limited. The United States is India's largest trading partner, but direct bilateral aid to India is insignificant and the volume of military sales is small compared with India's total arms import bill. However, India's worsening balance-of-payments position undergirds the importance of IMF credit for the country's economy.