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Indo-US Civilian Nuclear Cooperation: Reprocessing Issue Reconstructed

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From 18 July 2005 when Prime Minister Manmohan Singh and President Bush signed a Joint Statement to reaffirm a multifaceted relationship between their two countries, the possibility of nuclear cooperation has attracted maximum attention. This is not surprising since the promised cooperation in civilian nuclear energy marks the single most significant departure from long-held positions. Until now, the US had viewed a nuclear weapons-capable India as an outcast, to be chastised for impermissible possession of weapons of mass destruction. India was excluded from regulated nuclear commerce unless it accepted full scope safeguards on its nuclear facilities. It marked a sharp reversal of this approach when, in 2005, President Bush offered the promise of a constructive nuclear engagement with India, and set the two countries on a new yet untrodden path, strewn with the mistrust and suspicions of decades. Not surprisingly, the evolving nuclear relationship has evoked much disquiet amongst the officialdom, strategic community, scientists, and media of both countries. There are misgivings on the Indian side about how much India would have to give up and apprehensions in the US over not extracting enough returns from India as a quid pro quo for the unprecedented concessions on offer.

A range of issues has been identified on both sides as having the potential to become roadblocks for further movement on the agreement. This paper, however, confines itself to addressing the issues related to reprocessing as an important activity in the nuclear fuel cycle and the implications of the proposed Indo-US civilian nuclear cooperation agreement on this

modality. Given that India has a closed fuel cycle that uses the spent fuel from its power reactors for the fast breeder programme, reprocessing is central to India's national nuclear policy, which is premised on a three-stage programme. In fact, India is presently undertaking technology demonstration of its second stage wherein plutonium produced by reprocessing of spent uranium fuel from the first-stage pressurized heavy water reactors (PHWRs) will be used in fast breeder reactors. The fast breeder fuel cycle shall be a closed one with the reprocessing of spent fuel from these reactors providing the fuel for the next stage premised on thorium-based reactors. Utilization of the vast thorium deposits in the country is the long-term objective of the Indian nuclear power programme for providing energy security on a sustainable basis. As becomes evident, reprocessing is an activity that is critical for this program. How does the Indo-US nuclear agreement impact on it?

Two issues need to be considered here – one, relating to the transfer of reprocessing technology from the US/other nuclear suppliers; and second, relating to India's right to reprocess imported fuel irradiated during the operations of its own reactors.

Transfer of Reprocessing Technology

As far as the first issue of import of reprocessing technology is concerned, the Henry Hyde Act, 2006, on the basis of which the 123 agreement is being negotiated, considers this question in the context of US laws on non-proliferation of sensitive nuclear technologies (SNT), which includes enrichment of uranium, reprocessing of spent fuel

and production of heavy water. Section 103 (a) (5) of the Hyde Act directs US policy to restrict the export of SNT equipment and technologies, including to India. It also enjoins the US to work with the NSG in this regard. At the same time, Section 104 (b) (5) seeks India's cooperation with the US to prevent the spread of SNT to other countries that do not possess full scale, functioning enrichment or reprocessing plants! Therefore, while the US denies the technology to India, it indirectly acknowledges India's expertise in this field and seeks its support to ensure non-proliferation.

However, it is equally pertinent that Sec 104 para (c) (2) (I) that provides waiver authority to the President and Congressional approval for the agreement, allows a Presidential submission to the Congress describing the scope of the envisioned peaceful cooperation, and specifying whether it would include transfer of enrichment and reprocessing technologies. In fact, Section 104 (d) (4) (B) allows transfer of SNT under three circumstances. First, if the end user is a multinational facility participating in an IAEA approved programme to provide alternatives to national fuel cycle capabilities or is part of a bilateral or multinational programme to develop a proliferation resistant fuel cycle. Both these ideas

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are worth exploring by India, and could make India a producer and exporter of nuclear fuel to an expanding reactor market. Second, if appropriate measures are in place against illicit diversion of technology. This is a non-issue since India's facilities using imported technology or fuel would be under IAEA safeguards, and subject to extensive export controls. The third situation in which India could import reprocessing technology is if the original agreement for cooperation, the 123 agreement presently being

negotiated, would specify that such cooperation is authorized or an amended agreement would be submitted to Congress. As is evident, the Congress is seeking to retain the right to review and approve such cooperation, whilst providing the Executive with the authority to include it in the cooperation agreement.

It is common knowledge that the US Congress was unhappy with the manner in which the Bush Administration reversed its long-standing nuclear policy towards India without taking the Congress along. It, therefore, seeks to retain the right of oversight on future such initiatives. This, however, is no indication that the Congress would not entertain cooperation in reprocessing technologies in future. Indeed, the overwhelming support for the agreement suggests the opposite. Of course, it does mean that India will have to invest further diplomatic energy towards this effort. But is that not what diplomacy is meant for?

In fact, the scales on this issue have tilted in India's favour given that it has consistently been in the business of reprocessing from the time it first conceived its nuclear programme. The US has a once through fuel cycle, while reprocessing is a more mature technology available to India. Reprocessing for commercial purposes is something that the US is beginning to reconsider now, its own research and development in this direction was terminated in 1977 by President Carter in a move towards non-proliferation. It is only in the last two years that the US Department of Energy has begun exploring a new proliferation resistant fuel cycle that also tackles the growing concern over spent fuel management. Interestingly, four of the six Generation IV systems that have been chosen for study are fast reactors. Therefore, in the coming years, reprocessing technology will again be in focus. Accordingly, interest in India's expertise in the field and, hence, its bargaining power and leverage will grow. It is not inconceivable that the US might want to cooperate with India on this in future. Therefore, there is no reason to wind up details on this subject in the negotiations on the 123 agreement.

Right to Reprocess

The second issue involves India's right to reprocess spent fuel generated from imported nuclear fuel. This is most important for India since the real potential of nuclear energy to meet its energy requirements emerges from the possibility of using the energy remaining in spent fuel in fast reactors which breed more fissile material than they consume, and thus provide the promise of sustainable energy security.

The Hyde Act does not provide for waiver of Art 123 (a) (7) of the Atomic Energy Act, 1954 that prohibits this modality, unless separately negotiated, as has been done in the case of Japan and Euratom. While in the present thinking of American non-proliferation supporters, this is acceptable only for Tokyo and European nations, which are "allies," it is not unlikely that the US would eventually relent on India also. In fact, it would be foolish not to, since this would only add to the growing stockpiles of spent fuel discarded as waste and exacerbate problems of waste disposal. This is in the interests of neither India nor the US, or of the larger international non-proliferation community. In fact, the present renaissance in nuclear energy is causing a concern over the safe and sustainable management of the wastes generated by the operation of nuclear reactors. Reprocessing of spent fuel actually offers one solution, since it not only ensures that every watt of power is extracted from the fuel, but also simultaneously reduces the stocks of radioactive waste. There is a need for India to aggressively promote this viewpoint, as also bring out the dangers involved in unnecessary transport of nuclear materials from one shore to another.

The second reason that should influence American acceptance of India's reprocessing the fuel procured from outside and used in its power reactors is that this would bring the entire Indian fuel cycle under safeguards. And once IAEA safeguards on power reactors, civilian reprocessing facilities, and future fast breeder reactors have been negotiated, there could be no logical reason to deny this right to India. But, it might be too much to ask for everything in the

ongoing 123 negotiations. Therefore, if for the time being, India could manage some language that does not exclude this possibility, but provides an option for reconsideration at a future date, it should serve the purpose of moving ahead, at least on this issue. As cooperation proceeds and safeguards are applied and shown to be effective, American reluctance on many other issues would also melt over the years.

Conclusion

Very few in India, the US and the rest of the world had actually believed that the nuclear promise held in the July 18 statement would fructify. Ironically enough, critics of civilian nuclear cooperation in India and the US

have used almost similar arguments and fed off each other over the last 24 months. It is primarily the strong support of the political leadership in both countries that has allowed the agreement to get as far as this. They have managed to keep the bureaucracies from being thrown off course as serious bumps and potholes were being negotiated. Indians are used to such roads and it would be worthwhile to encapsulate the Indian journey thus far. To India's credit:

- It has negotiated with the US from a position of strength. This came from three existing realities: one, India's long standing non-proliferation credentials that gave it the confidence to seek being treated as an exception; two, the advances made by India's indigenous nuclear power programme that welcomes the

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prospect of imports, but has displayed the resilience to carry on despite sanctions and denials; and three, a quiet confidence in the country's ability to ensure a meaningful separation of its civilian and military programmes, without compromising either.

- It has witnessed a frenzied, but healthy debate on the subject. Opinions of every hue, from the most favourable to the stridently critical, with the whole range in between have been openly aired in every forum, from the Parliament to drawing rooms. While these keep the Indian administration in touch with the popular pulse, they also inform the US administration on the limits of how far India can be pushed.
- India has regularly shared its concerns and sensitivities with the US administration, offered suggestions and sought remedies.

Given the foregoing, it would be unfortunate now, to let some issues lead the process astray. Concerns must be voiced and sound advice passed around, but it must be understood that what President Bush and Prime Minister Singh have pulled off is nothing short of a coup in the nuclear non-proliferation sphere. Therefore, while working out the minute technicalities, Indian negotiators must always keep the larger picture in view of what this agreement means for the country.



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