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NSG Membership of Non-NPT States

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CONTENTS

	<i>Page</i>
Criteria/NPT Equivalence Debate: Merits of the Indian Application	1
Commitments Made by India	2
Exceptions in the Safeguards Agreement and Their Implications	4
Proliferation Implications of the Exceptions in the Indian Safeguards Agreement	6
Conclusion	8

NSG MEMBERSHIP OF NON-NPT STATES

Criteria/NPT Equivalence Debate: Merits of the Indian Application

The recent Nuclear Suppliers Group (NSG) membership applications by India and Pakistan have focused attention on criteria for admission of non-Nuclear Proliferation Treaty (NPT) states in the export control regime.

At the heart of the debate is the NSG document entitled ‘Procedural Arrangements’, which stipulates NPT as one of the ‘factors for participation’ of any state in NSG.

The debate has been revolving around the question of criteria which non-NPT states should meet with a view to establishing NPT equivalence. This debate has been oscillating between two extremes. On one hand, there is a view that no non-NPT state should be admitted unless it accedes to the Treaty as a non-nuclear weapon state (NNWS). On the other hand, India, and its supporters including the US, have been asserting that the commitments undertaken by India in 2008, and the subsequent IAEA safeguards agreement and Additional Protocol (AP) signed by it in 2009, are sufficient conditions for NSG membership. These states do not feel that India needs to make any additional non-proliferation commitment.

This paper attempts to examine the 2008 commitments made by India, including the safeguards agreement and Additional Protocol India signed pursuant to those commitments, and assess how those commitments fall short of the obligations of NPT states possessing nuclear weapons. It concludes with a set of technical criteria which NSG states should require India to meet with a view to rectifying the shortcomings of the 2008 exemption granted to India by NSG.

Commitments Made by India

The score card below shows the actual commitments undertaken by India in the 2005 Indo-US Joint Statement and actual implementation to date:

	Indian Commitments	Actual Implementation
i.	Identify and separate civilian and military nuclear facilities and programmes in a phased manner	Separation not fully implemented. 8 civilian power reactors, Fast Breeders Reactors, fuel cycle and other facilities outside safeguards. Close links remain between military and civilian programme. <i>More details below.</i>
ii.	Voluntarily place civilian facilities under IAEA safeguards	The 2009 Indian IAEA safeguards agreement riddled with exceptions. Marked divergence from standard IAEA safeguards agreements. There are civilian nuclear facilities outside safeguards. Safeguards can be applied to these facilities on temporary basis. Safeguarded material can be used in unsafeguarded facilities. India can substitute safeguarded material for unsafeguarded material.
iii.	Conclude IAEA Additional Protocol (AP) with respect to	Contrary to the commitment, the AP

	civilian facilities	which India has concluded applies only to nuclear exports from India. It does not apply to nuclear material, facilities or equipment in India.
iv.	Continue the unilateral moratorium on nuclear testing	No change in Indian opposition to Comprehensive Test Ban Treaty (CTBT). Has refused to sign.
v.	Work with the US for the conclusion of a multilateral fissile material cut-off treaty	Contrary to the spirit of the commitment, India has not ceased the production of fissile material for military purposes. In fact, huge new facilities for enrichment are being established outside safeguards.
vi.	Refrain from transfer of enrichment and reprocessing technologies (ENR) to states that do not have them and to support international efforts to limit their spread	Indian export control guidelines do not specifically prohibit transfer of ENR technologies. This falls short of the bilateral commitment with US as well as current NSG practice.
vii.	Secure nuclear materials and technology through comprehensive export control legislation and through harmonization and adherence to Missile Technology Control	As pointed above India's export control Guidelines do not fully correspond to NSG practices on ENR. India does not accept 2011

	Regime (MTCR) and NSG Guidelines	<p>NSG decision on NPT requirement for ENR transfers.</p> <p>India does not have an independent nuclear regulatory authority which could oversee nuclear material security and safety aspects.</p>
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Exceptions in the Safeguards Agreement¹ and Their Implications²

In relation to the debate on criteria for non-NPT states, and steps which non-NPT states should be required to take, it is necessary to examine more closely the 2009 India-IAEA umbrella safeguards.

Incomplete Separation: In 2006, India announced its civilian-military separation plan³. It agreed to placing 14 out of its existing 22 power reactors under IAEA safeguards. This separation plan clearly violated the spirit of Indian commitment on separation. The 8 reactors kept outside safeguards are power reactors (not designated as a part of military programme). Fast breeder reactors and other ‘civilian’ facilities were also kept outside safeguards. Nowhere in the world is such a significant component of civilian nuclear programme unsafeguarded.

¹ IAEA INFCIRC/754

² The analysis in this section has been taken from the study “*Nuclear Cooperation with India – Non-Proliferation Success or Failure?*” (February 2015) authored by John Carlson and paper entitled “*The Three overlapping streams of India’s Nuclear Programmes*” (April 2016) published by Harvard Kennedy School’s BELFER CENTER for Science and International Affairs.

³ IAEA INFCIRC/731

Moreover, for the future, India stated that facilities would be placed under safeguards *if* India determines that they are civilian. “A facility will be excluded from the civilian list if it is located in a larger hub of strategic significance, notwithstanding the fact that it may not be normally engaged in activities of strategic significance”. “A civilian facility would, therefore, be one that India has determined not to be relevant to its strategic programme.”

From the above it is clear that the overarching criterion will not be non-proliferation objective, but the judgment by India whether subjecting a facility to IAEA safeguards would impact on its strategic programme. This indicates continuing close links between India’s military and civilian programme.

Use of Safeguarded Nuclear Material in Unsafeguarded Facilities: Closely linked to the above are other unique provisions giving India considerable flexibility to move safeguarded material in and out of the unsafeguarded nuclear programme. The safeguards agreement (INFCRIC/754) allows India to use safeguarded material in normally unsafeguarded facilities i.e. facilities not listed in the Annex to the agreement (Articles 11f, 14b, 69-78, 84 and 94).

Articles 11f and 14b provide that where India uses safeguarded material in an unsafeguarded facility, safeguards will apply to the facility while the safeguarded material is present. This, in effect, amounts to **temporary application of safeguards**.

Use of Safeguarded Material With Unsafeguarded Material: The agreement allows India to use safeguarded and unsafeguarded materials together (Articles 25, 95 and 96). This provides the opportunity for safeguarded material to contribute to the unsafeguarded programme.

Substitution: Article 30d of the safeguards agreement allows India to substitute unsafeguarded nuclear material for safeguarded material.

Exemptions from Safeguards: Article 25 of the agreement allows special fissionable material (e.g. plutonium) produced through the use of safeguarded material to be exempted from safeguards provided it is produced in a reactor in which the proportion of safeguarded material is less than 30% of the total material.

The above exceptions in the Indian safeguards agreement are unique, which are *not* even available to the nuclear weapon states (NWS) under their safeguards agreements with IAEA. For these states, if a facility is eligible for safeguards, i.e. included in the *eligible facility list* under the agreement concerned, all nuclear material in the facility is subject to safeguards. Safeguarded material cannot be used outside an eligible facility.

Proliferation Implications of the Exceptions in the Indian Safeguards Agreement⁴

The proliferation implications of the exceptions in the Indian safeguards agreement defy the spirit of NPT and IAEA safeguards i.e. non-diversion of material intended for peaceful uses to military purposes. What the exceptions could mean in practice is illustrated by the following example:

⁴ The analysis in this section has been taken from the study “*Nuclear Cooperation with India – Non-Proliferation Success or Failure?*” authored by John Carlson and paper entitled “*The Three overlapping streams of India’s Nuclear Programmes*” published by Harvard Kennedy School’s BELFER CENTER for Science and International Affairs.

- a. India loads an unsafeguarded fast breeder reactor with MOX (mixed oxides of plutonium and uranium) comprising safeguarded plutonium and unsafeguarded uranium (**use of safeguarded material with unsafeguarded material and use of safeguarded nuclear material in unsafeguarded facilities**);
- b. India uses unsafeguarded uranium for the reactor's radial and axial *blankets*, in which plutonium is produced;
- c. Doing the calculations for India's Prototype Fast Breeder Reactor, in this example, when the reactor is loaded the proportion of safeguarded material (plutonium) to total material (plutonium and uranium) will be around 11% (i.e. well within the 30% threshold)⁵;
- d. When the reactor is unloaded at the end of its operating cycle, 11% of the plutonium produced in the blankets (corresponding to the initial proportion of safeguarded material) will be subject to safeguards (**substitution**);
- e. India can claim exemption from safeguards for the other 89% of the plutonium produced;

As the above example shows, the exceptions in the Indian safeguards agreement, coupled with incomplete separation, can enable India to produce fissile material for military purposes using foreign supplied safeguarded material. The Indian Prototype Fast Breeder Reactor can produce around 140 Kg of weapon-grade plutonium a year (roughly equivalent to 28 nuclear bombs), almost all of which can be used for military purposes. This is just the output from one unsafeguarded reactor. The

⁵ Calculations based on information in Glaser and Ramana, *Weapons-grade plutonium potential in the Indian prototype fast breeder reactor*, www.sceinceandglobalsecurity.org/archive/2007/10/weapon_grade_plutonium_product.html.

cumulative impact would be much more from several unsafeguarded reactors.

Conclusion

Contrary to what India claims, its 2005 commitments, 2006 separation plan, and the 2009 IAEA safeguards agreement and Additional Protocol, do not provide any proliferation benefits. To the contrary, the continued link between Indian civilian and military nuclear facilities, and exceptions in its safeguards agreement, provide it an opportunity to use foreign supplied safeguarded nuclear materials to produce unsafeguarded nuclear materials which can be used for military purposes.

This risk of production of fissile material through misuse of foreign supplied nuclear material is in addition to the obvious freeing up of the domestic nuclear fuel resources for military use. Since India is getting nuclear fuel for civilian power generation from foreign sources, its domestic nuclear fuel resources are free to be employed totally for military purposes. That India is already benefiting in this way is corroborated by new large scale uranium enrichment facilities being established in Karnataka and elsewhere outside IAEA safeguards. These facilities would not have been possible if India's domestic nuclear fuel resources were not freed up and were instead required to supply fuel for nuclear power reactors.

India's present civilian nuclear reactors are Heavy Water Reactors which run on natural Uranium. As such, the rationale for the new enrichment facilities cannot be explained except that they will be used for producing HEU for Indian nuclear submarines and thermonuclear weapons.

As explained above, the proliferation implications of the exceptions in the Indian safeguards agreement defy the spirit of NPT and IAEA safeguards i.e. non-diversion of material intended for peaceful uses to military purposes. The exceptions in the Indian safeguards agreement are unique,

which are *not* available to the nuclear weapon states under their safeguards agreements with IAEA.

Far from establishing NPT equivalence, the Indian safeguards agreement, separation plan and additional protocol, have provided India a cover to speed up its military nuclear programme and become eligible for foreign nuclear fuel.

Continuation of such exemptions, and Indian entry in NSG without rectifying the shortcomings of Indian non-proliferation commitments, will be detrimental to NSG non-proliferation objectives and strategic stability in South Asia by undermining the nuclear balance in the region.

India cannot simply claim NSG membership based on its 2008 commitments. NSG should require India to meet certain criteria which help in plugging the loopholes in its non-2005 proliferation commitments, 2006 separation plan and 2009 safeguards agreement and the Additional Protocol.

Based on the above analysis, NSG should require India to meet the following criteria for establishing NPT equivalence and assuring that cooperation for peaceful uses of nuclear energy does not lead to assisting Indian military nuclear programme:

- i. India should place all its civilian facilities and power generation reactors, including its Fast Breeder Programme under IAEA safeguards;
- ii. India should commit to placing all future power generation reactors and civilian facilities (foreign supplied or indigenous) under safeguards;
- iii. Safeguards should be permanent. The provision for temporary application of safeguards should be withdrawn;

- iv. All imported nuclear material should be under safeguards all the time;
- v. All nuclear material in a safeguarded facility should be subject to safeguards. Safeguarded material cannot be used outside eligible facility;
- vi. The exception for use of safeguarded material with unsafeguarded material should be withdrawn;
- vii. The provision for substitution of safeguarded material with unsafeguarded material should be withdrawn;
- viii. The Additional Protocol should apply to civilian nuclear material and facilities in India;
- ix. India must explicitly reflect, in its export control guidelines, its commitment not to provide ENR technologies to those who do not already possess them;
- x. India should explicitly commit to pursue disarmament negotiations (Article VI obligation of NPT).

The criteria proposed above do not suggest any new onerous undertakings by India. They only seek to address gaps in its existing commitments with a view to ensuring that these commitments can further the NSG's non-proliferation objective rather than undermining it.



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