SUBMISSION TO THE JOINT STANDING COMMITTEE ON TREATIES REGARDING THE

'AGREEMENT BETWEEN THE GOVERNMENT OF AUSTRALIA AND THE GOVERNMENT OF INDIA ON COOPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY'

5 December 2014

Friends of the Earth, Australia

CONTENTS

Acronyms

AONM − Australian Obligated Nuclear Materials
ASNO − Australian Safegtuards and Non-proliferation Office
CTBT − Comprehensive Test Ban Treaty
DFAT − Department of Foreign Affairs and Trade
FMCT − Fissile Material Cut-off Treaty
FoE − Friends of the Earth, Australia

IAEA − International Atomic Energy Agency
JSCT − Joint Standing Committee on Treaties
MTCR − Missile Technology Control Regime
NPT − (UN) Nuclear Non-Proliferation Treaty
NSG − Nuclear Suppliers Group

1. INTRODUCTION AND SUMMARY

Friends of the Earth, Australia (FoE) would welcome an opportunity to appear before the Joint Standing Committee on Treaties (JSCT) to elaborate on this submission.

FoE notes that both John Carlson[1], former Director-General of the Australian Safeguards and Non-Proliferation Office, and Crispin Rovere[2], founding member Asia-Pacific Leadership Network for Non-Proliferation and Disarmament, argue in their submissions to the JSCT that the Australia−India Nuclear Cooperation Agreement (hereafter the Agreement) should be rejected in its current form. Mr Carlson argues the case for side-letters with treaty status to overcome some of the most glaring deficits, and Mr Rovere argues that the Agreement in its current form is beyond redemption and needs to be renegotiated. Both Mr Carlson and Mr Rovere support Australia's uranium export industry and are supportive, in principle, of uranium sales to India.

Prof. Lawrence Scheinman, former Assistant Director of the US Arms Control and Disarmament Agency, notes in his JSCT submission that it "would seem imperative that Australia revise the terms of agreement with India to bring it into line with virtually all other partner states".[3] Others to have raised concerns include former Defence Department Secretary Paul Barratt[4]; and Ron Walker[5], former Chair of the International Atomic Energy Agency (IAEA) Board of Governors.

Clearly, concern about the agreement extends beyond anti-nuclear and environmental groups. It is not in Australia's national interest to ratify the Agreement in its current form. It is highly doubtful whether the long-terms interests of the (mostly foreign) companies mining uranium in Australia would be well served by ratification of the Agreement given that it would likely lead to a wide-ranging diminution of safeguards standards with a concomitant increase in proliferation risks and tensions.

Crispin Rovere notes in his submission: "The text of this Australia–India nuclear agreement accords entirely with Indian preferences rather than well-established best practice. In truth, this treaty appears less like the deepening of a bilateral partnership and more like one of a client state being dictated to in an expanded Indian empire. It is a major display of weakness on the part of the Australian Government, and a failure to stand up for Australia's national interests in this area. ... The basic point is that the Australia-India nuclear agreement does significant harm to the global non-proliferation regime and Australia's standing as a nuclear supplier, while the strategic dividends that some hope to gain will probably never materialise."

Then Prime Minister Julia Gillard said in 2011: "We must, of course, expect of India the same standards we do of all countries for uranium export − strict adherence to International Atomic

[1] www.aph.gov.au/DocumentStore.ashx?id=79a1a29e-5691-4299-8923-06e633780d4b&subId=301365
[2] www.aph.gov.au/DocumentStore.ashx?id=515f34fe-2bbf-4dbd-af30-092969773fff&subId=301553
[3] www.aph.gov.au/DocumentStore.ashx?id=1b9bdc72-0516-4825-ab9d-4c331f505703&subId=302102
[4] www.abc.net.au/unleashed/3684518 html
[5] www.lowyinterpreter.org/post/2011/11/18/Uranium-Were-selling-out-our-principles.aspx
See also Ron Walker's submissions to JSCT:
www.aph.gov.au/DocumentStore.ashx?id=eeed39e8-2c3c-400b-a9ff-4d744da48c41&subId=301939
www.aph.gov.au/DocumentStore.ashx?id=9b3d0478-c3ad-4d97-a1c2-5747f1265ebc&subId=301939

Energy Agency arrangements and strong bilateral undertakings and transparency measures that will provide assurances our uranium will be used only for peaceful purposes."[6] Currently the Agreement does not come close to meeting the stipulations set out by Ms Gillard − or similar stipulations set out by the current government − so the JSCT should have no hesitation in recommending against ratification of the Agreement, or recommending major revisions prior to ratification.

FoE believes that the JSCT should reject the Agreement for the following reasons:

1. India continues to expand its nuclear weapons arsenal. India continues to expand its military and dual-use fissile material production capabilities. India continues to expand its missile and other delivery capabilities. India refuses to sign and ratify the Comprehensive Test Ban Treaty. There is nothing more that India could possibly be doing to escalate regional and global WMD proliferation risks and tensions. To reward that behaviour by reversing the previous bipartisan policy of banning uranium sales to non-NPT states is indefensible.

2. There is no requirement in the Agreement for India to in any way curb its nuclear weapons program. For example there is no requirement for India to sign and ratify the Comprehensive Test Ban Treaty (CTBT), to cease producing fissile material for nuclear weapons, to curb the development and expansion of its missile/delivery capabilities, etc.

3. The multifaceted weakening of Australia's safeguards requirements embedded in the Agreement will have a knock-on effect. There is no logical reason why other uranium customer countries − current and future − should be denied the concessions granted to India.

Crispin Rovere notes in his JSCT submission:

> *"In this agreement Australia is privileging India ahead of all other nuclear export partners in the form of a significantly weakened safeguards apparatus. India will be able to reprocess AONM [Australian Obligated Nuclear Materials] to produce plutonium, possibly at weapons grade, with no specific permission from Australia. India will not need to account directly to Australia for the AONM used in its nuclear program, and there is no provision for the return of that material in the event of India violating the conditions. This is unheard of in any nuclear agreement Australia has been party to. Even if India proves completely trustworthy, it is unrealistic to believe that Australia's other nuclear partners will accept less favourable conditions in perpetuity. Refusal by Australia to cede to the demands of other nuclear partners will result in significant harms to these bilateral relationships, while an Australian capitulation will undermine the non-proliferation regime generally, creating an environment where the risk of nuclear weapon proliferation becomes unacceptable."*

Likewise, Ron Walker notes in his JSCT supplementary submission:[7]

> *"If the impression were created that our resolve on these matters is now weaker, among other*
> *consequences:*
> *- Each of the 39 countries covered by our network of nuclear safeguards agreements would have*
> *grounds to resent our having demanded of them compliance with terms we do not require of India. They would be encouraged to seek exemption from any aspect of the treaties which they*
> *found onerous.*

[6] www.world-nuclear-news.org/NP-Gillard_Drop_ban_on_uranium_sales_to_India-1511114.html
[7] www.aph.gov.au/Parliamentary_Business/Committees/Joint/Treaties/28_October_2014/Submissions
www.aph.gov.au/DocumentStore.ashx?id=9b3d0478-c3ad-4d97-a1c2-5747f1265ebc&subId=301939

- Any country with which we might seek in future to negotiate on nuclear or other matters would
have grounds for expecting us to settle for less than our declared aims."

Likewise, John Carlson notes in his JSCT submission:

"If the Government does compromise Australia's safeguards conditions, inevitably this will lead to other agreement partners asking for similar treatment. If we are prepared to give a special deal to India, it will be impossible to justify not passing this on to others who will question why they are being discriminated against. This would start the unravelling of the entire policy. If the Government wants to change the policy, this should be examined through a careful process of review, similar to the process that resulted in the policy in the first place (the Ranger Inquiry and substantial supporting studies by departments and agencies), and the review that confirmed the policy – the ASTEC inquiry commissioned by the Hawke government. Also, as noted, other governments and the EU need to be consulted. Piecemeal change through individual agreements is bound to lead to unexpected and unwanted consequences."

Australia's safeguards requirements should be strengthened, not weakened − and to weaken them for a state which is expanding its nuclear weapons arsenal and refuses to sign and ratify the CTBT is extraordinary and indefensible.

4. If ratified, the Australia−India agreement will encourage other nuclear/uranium exporting countries to adopt equally weak standards.

Crispin Rovere notes in his JSCT submission:

"As with the proposed Australia–India nuclear agreement, the text of the Canadian deal likewise abrogates the widely accepted principle that the nuclear recipient is accountable to the supplier. This is ironic given it was nuclear material diverted from a Canadian-supplied reactor that led to the India's break-out in the first place. It would be like the citizens of Hiroshima deciding it would be a good idea to host American nuclear weapons within the city – the absurdity is quite astonishing. The good news is that Canada's deal has earned the Harper government pariah status with regard to nuclear safeguards. So long as Canada remains isolated on this issue, the integrity of the non-proliferation regime will be maintained, with a future Canadian government likely to re-negotiate the terms of their agreement. If, however, Australia were to follow Canada's example it would normalise Canada's position. This would advantage the Harper government politically, but with the substantial side-effect of weakening the nuclear nonproliferation regime as a whole."

John Carlson notes in his JSCT submission:

"What happens with the Australia-India agreement will be watched closely by other countries. Australia is involved with Canada, the US and the EU – which for decades have had similar safeguards requirements – in an informal working group on bilateral safeguards. A topic of particular interest in this group is tracking. The decision of the Canadian government to waive tracking for India ... will have caused consternation in this working group. The administrative arrangement under the US−India agreement has been outstanding for several years, apparently over legal issues, including tracking, where it is understood India is refusing to account for material under the agreement. If Australia gives in to India on accounting and tracking, this will be used by India to pressure the US, and no doubt the EU. Japan is also watching closely. Japan and India have been trying to conclude a nuclear cooperation agreement for some years, but this has been stalled over similar issues."

5. Already, the willingness of a number of countries to engage in nuclear trade with India (or to enter into negotiations towards that end), in the wake of the US−India nuclear agreement, has had adverse consequences − specifically, it has legitimised China's expanding nuclear cooperation with Pakistan.

It also increases the risk of other countries pulling out of the NPT, building nuclear weapons, and doing so with the expectation that civil nuclear trade would continue given the Indian precedent.

It also makes it more difficult to address proliferation problems such as those associated with Iran's nuclear program (and Russia's willingness to build more reactors in Iran).

A more appropriate course of action would be for Australia to commit to strengthening rather than weakening the troubled nuclear non-proliferation and disarmament regime. To that end, Australia needs to maintain the ban on uranium sales to non-NPT states, to work internationally to re-establish that norm, and to be more pro-active in other areas such as policy on uranium supply to 'declared' nuclear weapons states flouting their disarmament obligations under the NPT, supply to countries that have not ratified the CTBT, etc.

Australia would certainly not be alone in seeking to preserve what remains of the principle that non-NPT states should be excluded from civil nuclear trade. During the 2010 NPT Review Conference, the 118 nations of the Nonaligned Movement complained that the US−India agreement had given a non-NPT state more benefits than NPT parties and argued that comprehensive, full-scope safeguards ought to be a requirement for nuclear supply.

Australia can either stand with the vast majority of nations in upholding and attempting to strengthen the fragile nuclear non-proliferation and disarmament regime, or we can stand with those who undermine it.

Australia does need policy change − but it is not the ban on uranium exports to non-NPT states that needs changing. It is the unwritten, bipartisan policy of paying lip-service to the importance of nuclear non-proliferation and disarmament while undermining these objectives in so many ways − maintaining Australia's place under the US nuclear weapons umbrella, exporting uranium to nuclear weapons states which flout their NPT disarmament obligations, refusing to invoke Australia's powers under bilateral agreements to prevent plutonium stockpiling, and generally subordinating nuclear non-proliferation and disarmament goals to economic and political considerations.

6. The Administrative Arrangement has not yet been completed and so cannot be reviewed by the JSCT. As John Carlson notes, the Administrative may be "even more consequential than the agreement itself" as it sets out the working procedures for the agreement.[8] It would be inappropriate and irresponsible for the JSCT to endorse the draft agreement until such time as i) a robust administrative arrangement is in place and ii) has been reviewed by the Committee and iii) has been released for public scrutiny.

Administrative Arrangements are typically not publicly released. The JSCT should recommend public release of the Administrative Arrangement associated with the Agreement because i) it contains important information without which the adequacy of the Agreement cannot be meaningfully assessed and ii) claims that Administrative Arrangements should not be released for reasons of commercial confidentiality indefensibly privilege commercial objectives over proliferation and safety objectives, and in any case it is doubtful that the Administrative

[8] www.lowyinterpreter.org/post/2014/10/01/Is-the-Abbott-Government-abandoning-Australias-nuclear-safeguards-standards-for-India.aspx

Arrangement would contain commercially sensitive information. If the Administrative Arrangement does contain commercially sensitive information, that information could be redacted.

Friends of the Earth has long called for Administrative Arrangements to be made public and we are pleased to read in John Carlson's submission: "Given the public interest in this agreement and the concerns about the administrative arrangement, JSCOT may wish to recommend that the administrative arrangement be made public."

The JSCT should go further and recommend public release of the Administrative Arrangements associated with all of Australia's nuclear cooperation agreements.

7. International Atomic Energy Safeguards (IAEA) inspections in India cover only part of India's 'civil' nuclear program. The IAEA provides no country-specific information on the number and nature of safeguards inspections carried out in India. Moreover, even if a rigorous safeguards regime was in place, that would in no way undo the damage done by opening up civil nuclear trade with non-NPT states.

8. Inadequate safety standards and inadequate regulation: India's Public Accounts Committee said in a 2013 report that the country's nuclear safety regime is "fraught with grave risks" and that the nuclear regulator is weak and under-resourced. In 2012, India's Auditor-General found that 60% of safety inspections for operating nuclear power plants were either delayed or not undertaken at all.

9. The repressive response of the Indian government to citizens opposed to nuclear projects should alone rule out India as a suitable customer for Australian uranium. At least five citizens have been killed and a large number face extraordinary charges − in particular, sedition charges − for participating in peaceful protests.

A few further introductory comments are made here:

The Australia−Russia Nuclear Cooperation Agreement needs to be renegotiated. The Australia−Russia Nuclear Cooperation Agreement permits the processing of AONM at an enrichment plant which is not subject to IAEA safeguards.[9] That is a significant problem in and of itself. It is still more of a problem given the precedent it sets for other uranium customer countries and potential customer countries such as India. The Australia−Russia Nuclear Cooperation Agreement should be renegotiated to close that loophole. There is no better time to address that problem than now, with uranium sales to Russia suspended by the Abbott government.

Other flaws in the Australia−Russia Nuclear Cooperation Agreement should also be addressed such as the former ALP government's rejection of the JSCT recommendation against ratification of the agreement until "IAEA inspections are implemented for Russian facilities that will handle Australian Obligated Nuclear Materials". In other words, an adequate IAEA safeguards inspection regime in Russia ought to be in place before uranium sales to Russia are resumed. Once again, this issue is important in and of itself and it also has knock-on effects: why should India or any other uranium customer country be subject to a meaningful IAEA safeguards inspection regime when Russia is not?

Uranium export revenue and bilateral trade: Claims of significant export revenue from uranium exports to India ignore readily-available facts. Likewise, claims that the nuclear cooperation agreement will indirectly boost bilateral trade by fostering trust and goodwill ignore readily-available facts. Projections of exponential growth leading to hundreds of gigawatts (GW) of nuclear

[9] www.foe.org.au/anti-nuclear/issues/oz/u/cc#russia

capacity in India should be disregarded given the long history of unmet expectations, and given the current difficulties facing the nuclear power sector in India.

Legislation and potential legal challenges: The DFAT/ASNO National Interest Analysis notes that "in light of the unique framework within which nuclear cooperation with India is proposed, the Government is considering legislation to clarify the legal basis for uranium transfers to India." John Carlson's submission questions whether the Agreement (and yet-to-be-completed Administrative Arrangement) will comply with Australian law. Specifically, Carlson states: "The requirement for tracking exists not only under Australia's various nuclear agreements, but also under the Safeguards Act − section 51(2) requires the Director General of ASNO to prepare an annual report showing, for all materials and items of Australian origin and for each jurisdiction (i.e. for each agreement), the total quantities in each stage of the nuclear fuel cycle, the intended end-use, and any unreconciled accounting differences. This cannot be done without tracking."

Thus the government may be pursuing a course of action which is illegal under the Safeguards Act (the Nuclear Non-Proliferation (Safeguards) Act 1987). And the JSCT is being asked to recommend ratification of an Agreement which forms part of that illegality. The JSCT may wish to seek legal advice.

JSCT should press the government (and government agencies such as DFAT/ASNO) as to whether consideration is being given to weakening section 51(2) of the Safeguards Act.

JSCT members disinclined to recommend ratification of the appalling Australia−India Agreement should note that there may be legislative levers, e.g. voting down a government Bill which aims to weaken the Safeguards Act at the behest of India, as well as the opportunity to put forward amendments to any such Bill.

DFAT/ASNO: John Carlson notes in his JSCT submission that a number of statements in the National Interest Analysis produced by the Department of Foreign Affairs and Trade (DFAT) and the Australian Safeguards and Non-proliferation Office (ASNO) are incorrect, e.g.

- "the National Interest Analysis is not correct in saying India expects to have all its civilian reactors under safeguards by the end of 2014"
- "the National Interest Analysis is incorrect when it says that AONM (Australian-obligated nuclear material) will be subject to the additional protocol (NIA paragraph 11) and that the Australia- India agreement assures that all civilian facilities in India and all AONM will be subject to the additional protocol ..."
- "These examples show that the statement in the National Interest Analysis (paragraph 22) that *'Any plutonium or other special fissionable material that is separated by reprocessing AONM would be used only to produce nuclear fuel for India's IAEA-safeguarded nuclear energy'* programme is not accurate for all situations that could arise under the India-IAEA agreement.

ASNO has a long history of making inaccurate statements, and it has a history of misleading the JSCT and thereby misleading Parliament,[10] e.g. asserting that strict safeguards would ensure peaceful use of AONM in Russia when DFAT/ASNO were well aware of the rarity of safeguards inspections in Russia.[11] The JSCT should consider instigating (or recommending) disciplinary action against those responsible for the inaccurate statements.

[10] www.foe.org.au/sites/default/files/asnoes_0.pdf
www.foe.org.au/anti-nuclear/issues/oz/u/safeguards/asno/foe-critique
[11] www.foe.org.au/anti-nuclear/issues/oz/u/cc#russia

The JSCT should also investigate the suggestion from John Carlson that the "major problems with this agreement suggest that ASNO has been overruled on the provisions of the agreement".

'Strategic importance': The claim that Australia should sell uranium to India because of India's 'strategic importance' ignore the strategic importance of Pakistan (which resents the preferential treatment given to India), the strategic importance of de-escalating nuclear proliferation in South Asia, and the strategic importance of the global nuclear non-proliferation / disarmament regime − including the NPT.

Successive Australian governments have repeatedly emphasised the strategic importance of the NPT, describing it as the "cornerstone of the non-proliferation regime." That view is incompatible with uranium sales to a non-NPT state.

Some proponents of uranium sales to India claim the NPT is flawed and anachronistic − but they have put forward no serious proposals for an alternative global non-proliferation system, nor have they explained the logic of further weakening an already flawed non-proliferation and disarmament regime as a logical or necessary step towards the establishment of an alternative system.

Input from nuclear fuel cycle experts: The JSCT may consider pursuing the recommendation in Kalman Robertson's submission to seek input from nuclear fuel experts.[12] Submissions from Mr Robertson, John Carlson and others raise numerous complex technical issues. John Carlson notes in his JSCT submission that "India's IAEA safeguards agreement is very complex" and "Australia has no experience with an agreement of this complexity: it is impossible to foresee all the situations that might arise under it". The Australia−India Agreement adds another level of complexity to the India−IAEA Agreement.

To cite just one of the complexities from John Carlson's submission:

> *"[S]uppose India wishes to use an unsafeguarded fast breeder reactor to produce weapons-grade plutonium for weapons use but does not have sufficient unsafeguarded plutonium for the fuel required. It could use safeguarded plutonium to make up the shortfall in fuel, provided this is less than 30% of the plutonium fuel. The weapons grade plutonium produced would be pro-rated between safeguarded and unsafeguarded, the latter being available for weapons. The benefit to India in using safeguarded plutonium in this scenario is being able to produce plutonium for weapons more quickly than would otherwise be possible." Moreover, "this scenario could also work with safeguarded facilities – India can use unsafeguarded material with safeguarded material in a safeguarded facility and exempt from safeguards plutonium produced in the unsafeguarded material."*

Mr Robertson raises a similar scenario:

> *"India could hypothetically burn fuel containing a mix of 75% unsafeguarded nuclear material and 25% NMSA [nuclear material subject to the agreement] in a reactor for a short period of time in order to produce irradiated fuel containing weapons-grade plutonium. Once irradiation in the reactor is complete, and provided that 25% of the irradiated fuel remained under safeguards, the other 75% could be taken to an unsafeguarded facility and used as a source of plutonium for nuclear weapons. If this scenario is likely to occur in practice, then it would be reasonable to argue that Australian uranium could indirectly benefit an Indian nuclear weapons program and that this represents a significant lowering of the safeguards standard when compared with the agreements with Russia and China. The Joint Standing Committee on Treaties should consult with nuclear fuel cycle experts to determine the circumstances in which India could*

[12] www.aph.gov.au/DocumentStore.ashx?id=3e64b407-959b-4f59-9854-89379163e403&subId=301968

realistically process unsafeguarded nuclear material that it intended to use for nuclear weapons alongside NMSA in a single facility under temporary safeguards. This would help to determine whether or not this provision should be considered to represent a significantly weaker safeguards standard than previous nuclear cooperation agreements.

Climate and energy: The alleged greenhouse 'benefits' of uranium sales with India would at most be minuscule and rest on the arbitrary assumption that nuclear power displaces more greenhouse-intensive energy sources instead of i) alternative uranium sources or ii) power/energy sources with equal or lower emissions. There are much safer ways to help India curb greenhouse emissions than encouraging an expansion of nuclear power. Australia should help India develop its massive renewable energy potential rather than supporting India's dangerous, poorly-regulated nuclear power sector and worsening WMD proliferation tensions and risks in the process.

Disarmament and Non-proliferation Dialogue: The DFAT/ASNO National Interest Analysis states that Australian and Indian officials held an inaugural Disarmament and Non-proliferation Dialogue in February, and there is agreement to hold such talks annually. If Australia is to secure meaningful disarmament commitments from India, that should be done via a renegotiated Nuclear Cooperation Agreement. There is no prospect of securing commitments once that bargaining chip has been wasted. The Disarmament and Non-proliferation Dialogue is disingenuous window-dressing and the JSCT should call shenanigans on it. John Carlson notes in his JSCT submission that "we should expect a more tangible demonstration of India's good intentions than just an annual dialogue."

Public opposition: Plans to sell uranium to India do not enjoy public support:

- A 2008 poll by the Lowy Institute found that 88% agreed that Australia should "only export uranium to countries which have signed the global Nuclear Non-proliferation Treaty".[13]
- A 2012 opinion poll by the Lowy Institute found 61% of Australians opposed uranium sales to India, nearly double the number in support (33%). The number strongly opposed (39%) was more than four times greater than the number strongly in support (9%).[14]
- A 2008 survey found 62% of Australians opposed uranium exports to nuclear weapons states compared to 31% in favour.[15]
- An International Atomic Energy Agency survey of 1,000 Australians in 2005 found 56% believed the IAEA safeguards system was ineffective − nearly double the 29% who considered it effective.[16]

CONDITIONAL ENDORSEMENT

If JSCT endorses the Agreement, that endorsement ought to be heavily qualified and conditional. A number of possible conditions are listed here.

Meaningful non-proliferation concessions by India such as:

- Signing and ratifying the Comprehensive Test Ban Treaty. John Carlson notes in his JSCT submission: *"The CTBT requires ratification by eight specified countries before it can enter into force. These are: China, Egypt, Iran, Israel and the US, which have signed but not yet ratified; and India, Pakistan and North Korea, which have not signed. US ratification depends on gaining the necessary number of votes in the Senate, which the Obama Administration is pursuing. The general expectation is that when the US is able to ratify, China and the others will quickly follow. However, if India does not ratify China might use this as an excuse not do*

[13] http://lowyinstitute.cachefly.net/files/pubfiles/Lowy_Poll08_Web1.pdf
[14] www.lowyinstitute.org/publications/lowy-institute-poll-2012-public-opinion-and-foreign-policy
[15] www.acfonline.org.au/news-media/releases/australians-are-2-1-against-uranium-exports-countries-nuclear-weapons
[16] www.iaea.org/Publications/Reports/gponi_report2005.pdf

so. India's position therefore is critical. India has said it will maintain its unilateral test moratorium – it is not asking too much for it to show good faith by signing the CTBT now." Requiring India to sign and ratify the CTBT as a prerequisite for uranium exports is an achievable outcome and, as discussed in Crispin Rovere's submission, it would have significant positive effects in de-escalating proliferation in South Asia. Alternatively, as recommended by Mr Rovere, India could be required, as a prerequisite for Australian uranium exports, to make a treaty-level commitment to sign and ratify the CTBT once the US has done so (as China has already indicated it will do).

- A cessation of the production of fissile material for nuclear weapons.
- Curbing the development and expansion of India's missile/delivery capabilities.
- A complete separation of military and civilian nuclear programs, with the entire civilian program placed under safeguards.
- Placing *all* imported nuclear material under IAEA safeguards (as discussed on p.4 of John Carlson's submission).
- India is building a large uranium enrichment plant, the Special Material Enrichment Facility in Karnataka, which will significantly increase India's ability to produce enriched uranium for both civil purposes and also nuclear weapons. As David Albright and Serena Kelleher-Vergantini from the Institute for Science and International Security argue, India should announce that the Special Material Enrichment Facility will be subject to IAEA safeguards and used only for peaceful purposes.[17]
- India has nearly completed construction of an unsafeguarded 500 MW fast breeder reactor. As a prerequisite for Australian uranium sales, India should place the reactor under IAEA safeguards and make treaty-level undertakings not to use it to produce fissile material for weapons.

Stronger safety standards, and stronger, independent regulatory oversight ought to be preconditions for uranium export to India.

The JSCT should recommend against ratification of the Australia−India Agreement unless (among other conditions) details are publicly released on an annual basis regarding the number of IAEA inspections in India, the locations inspected (and the locations of eligible facilities not inspected) and other relevant details. Currently, no country-specific information is released on IAEA inspections in India. The IAEA does not even release, as it used to, aggregate information on the number of inspections carried out in India, Pakistan and Israel.

The Agreement should not be ratified until numerous specific flaws in the text are rectified:

- Provisions regarding reprocessing/plutonium need to be tightened.
- Australia must have the right to request (and receive) IAEA safeguards reports insofar as they relate to AONM.
- Provisions for fallback safeguards must be made at least as strong as provisions Australia requires of other countries.
- Provisions for the return of supplied materials must be at least as strong as provisions Australia requires of other countries.
- Dispute settlement provisions must be at least as strong as provisions Australia requires of other countries.

2. NUCLEAR POWER IN INDIA − A 'DEEP FREEZE' DESPITE THE US−INDIA AGREEMENT

[17] http://isis-online.org/isis-reports/detail/indias-new-uranium-enrichment-plant-in-karnataka1/

India has just 5.3 GW of installed nuclear capacity (as of December 2014) and 4.3 GW under construction.[18] That 5.3 GW is 2.5% of India's electricity-generating capacity of 211 GW.[19]

India's Power, Coal and Renewable Energy Minister Piyush Goyal said in November 2014 that the government remains "cautious" about developing nuclear power. He pointed to waning interest in the US and Europe: "This government would like to be cautious so that we are not saddled with something only under the garb of clean energy or alternate energy; something which the West has discarded and is sought to be brought to India."[20]

Regarding the impact of the US−India deal and related events on nuclear power generation in India, Harvard University academic M.V. Ramana noted in a (prescient) December 2009 paper:[21]

> *"The effects of the NSG waiver remain uncertain. Though the DaE [Department of Atomic Energy's] nuclear reactor construction has been marked with time and cost overruns, overnight construction costs are cheaper than reactors sold on the international market, primarily because of lower labour costs, but also because licensing requirements are easier to meet. Nevertheless, nuclear electricity remains more expensive than coal-based thermal power that is and will remain the staple source of electricity in the country. Unless foreign countries offer cheap loans for purchasing imported reactors, India is unlikely to be able to afford them. Such financing is unlikely to be a viable means for large-scale expansion of nuclear power in India.*
>
> *"Despite media hype and continued government patronage, nuclear power is unlikely to contribute significantly to electricity generation in India for several decades. apart from the high cost of the power it produces, one important factor that will reduce the potential contribution of nuclear power even further is the reliance on breeder reactors, a technology shown to be unreliable in most countries that have experimented with them. a shift to the more reliable light water reactors might increase nuclear power's contribution to electricity generation; however, in doing so, the nuclear establishment is faced with a dilemma. On the one hand, LWRs can be imported from the West at unit costs much higher than Indian PHWRs. This would make nuclear electricity uncompetitive. On the other hand, if the DaE were to insist on local manufacture of reactor components, as a way of leveraging India's lower labour costs, many of the construction projects might proceed slowly, as has been the case in the past. In any case, nuclear power will only contribute a modest share of electricity to India's energy needs for several decades at the very least."*

A November 2014 article in *The Hindu* notes that three factors have put a break on India's reactor-import plans: "the exorbitant price of French- and U.S.-origin reactors, the accident-liability issue, and grass-roots opposition to the planned multi-reactor complexes."[22]

The repressive response of the Indian government to citizens opposed to nuclear projects should alone rule out India as a suitable customer for Australian uranium. There have been at least five deaths in the struggles against Koodankulam, Jaitapur (Maharashtra) and Gorakhpur (Haryana)

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[18] www.world-nuclear.org/info/Facts-and-Figures/World-Nuclear-Power-Reactors-and-Uranium-Requirements/
[19] The 211 GW figure is from September 2012. www.world-nuclear.org/info/Country-Profiles/Countries-G-N/India/
[20] 6 Nov 2014, 'Govt cautious about tapping nuclear energy for power generation', www.thehindu.com/news/national/govt-cautious-on-westdiscarded-nuclear-technology-says-piyush-goyal-at/article6570575.ece
[21] M.V. Ramana, 2009, 'The Indian Nuclear Industry: Status and Prospects', www.cigionline.org/publications/paper-series/nuclearenergyfutures
[22] Brahma Chellaney, 19 Nov 2014, 'False promise of nuclear power', www.thehindu.com/opinion/lead/false-promise-of-nuclear-power/article6612000.ece

nuclear power plants since 2010.[23] Huge numbers of people have been arrested and many face draconian sedition charges.[24] Shamefully, the Indian government is employing a tactic also used by the repressive Russian state (which Australia no longer entrusts with AONM): blaming anti-nuclear opposition on foreign agitators, notwithstanding overwhelming evidence to the contrary.[25]

India's Civil Nuclear Liability Act was enacted in August 2010.[26] The legislation does not completely indemnify suppliers. Energy Minister Piyush Goyal noted in November 2014 that the law remains an obstacle to nuclear vendor countries and companies. Asked if a breakthrough on the liability dispute was possible ahead of President Obama's January 2015 visit to India, US Assistant Secretary of State Nisha Biswal said in November 2014: "I see there is a lot of hard work ahead and I would not be sanguine about announcing any early breakthrough. What is required right now is not a lot of unrealistic expectations."[27] The *Hindustan Times* reported on 30 November 2014 that the Indian government is working on a plan to weaken the liability law − options include setting up an insurance pool, fixing a limit on reactor components for the purpose of determining liability, and the PM providing a personal assurance that vendors won't be harassed unnecessarily in the event of an accident.[28]

The Times of India reported in November 2014 that US investment in nuclear power in India remains far off. In addition to unresolved liability issues, India and the US are yet to complete administrative arrangements concerning safeguards and non-proliferation assurances. The US is reportedly is demanding non-proliferation assurances that India is unwilling to give, and the two countries have yet to agree on matters regarding the tracking of nuclear materials through the fuel cycle.[29]

Implausible projections of nuclear power growth in India

Projections of a several-fold increase of India's nuclear power capacity from a very low base (5.3 GW) are plausible. The World Nuclear Association's 'Nuclear Century Outlook' gives a range of 20−70 GW for nuclear capacity in India in 2030.[30]

Projections of exponential growth leading to hundreds of gigawatts of nuclear capacity should be disregarded. India has a history of making projections that have not been realised. For example:

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[23] Hasan Ehtisham, 29 Aug 2014, 'Australian and Indian nuclear trade', www.dailytimes.com.pk/opinion/29-Aug-2014/australian-and-indian-nuclear-trade
Senator Scott Ludlam, 16 Sept 2012, 'Media release: Greens urge PM to raise human rights and nuclear safety on India tour'

[24] Kumar Sundaram, July 2014, 'Sanity on nuclear policy is foreign to the Indian government', www.wiseinternational.org/node/4068

[25] Suvrat Raju and M.V. Ramana, 19 Sept 2012, 'Where the mind is full of fear', www.thehindu.com/opinion/lead/where-the-mind-is-full-of-fear/article3911903.ece

[26] Siddharth Varadarajan, 22 October 2010, 'India resists U.S. pushback on nuclear liability', www.hindu.com/2010/10/22/stories/2010102253960100.htm.
21 Oct 2010, 'Liability law has put nuclear agreement in jeopardy: Burns', www.thehindu.com/news/national/article841131.ece
26 Aug 2010, 'Indian liability bill passes lower house', www.world-nuclear-news.org/RS_Indian_liability_bill_passes_lower_house_2608101 html

[27] 28 Nov 2014, 'U.S. plays hardball with India on nuclear deal', www.thehindu.com/news/national/us-plays-hardball-with-india-on-nuclear-deal/article6640724.ece

[28] 30 Nov 2014, "Govt plans N-revival, focuses on investor concerns', www hindustantimes.com/india-news/govt-plans-n-revival-looks-for-answers-to-investor-concerns/article1-1291627.aspx

[29] Indrani Bagchi, 19 Nov 2014, 'American officials put up hurdles, try to scuttle India-US nuclear deal', http://timesofindia.indiatimes.com/india/American-officials-put-up-hurdles-try-to-scuttle-India-US-nuclear-deal/articleshow/45198136.cms

[30] www.world-nuclear.org/WNA/Publications/WNA-Reports/nco/Nuclear-Century-Outlook-Data/

- In 1962 India's Department of Atomic Energy predicted 20−25 GW in 1987 − the true figure was 0.95 GW (less than 5% of the forecast).[31]
- The Department later predicted 43 GW in 2000 − the true figure was 2.7 GW (6% of the forecast).[32]

Despite their poor track records, the Indian Department of Atomic Energy, the Indian Atomic Energy Commission and others continue to make unrealistic predictions. Those unrealistic predictions are then used to bolster the case for uranium sales from Australia to India.

3. WINDFALL PROFITS FROM URANIUM SALES?

A 2011 report in the Fairfax press claimed that uranium sales to India could generate A$1.7 billion in annual exports.[33] Some number-crunching gives the lie to such claims.

India's uranium demand in 2014 will amount to just 913 tonnes of uranium (tU) — 1.4% of world demand.[34]

If Australia supplied 20% of that demand, that would equate to 913/5= 183 tU.

Australia's uranium exports in 2013 amounted to 6205 tU[35] so an increase of 183 tU would equate to an increase of 2.9%. The export revenue (for the mostly-foreign companies mining uranium in Australia) would amount to around $21 million.[36] That is (roughly) two orders of magnitude short of the figure in the Fairfax press. Australia's national export revenue ($315 billion in 2011/12) would grow by an imperceptible < 0.01%.

Uranium export from Olympic Dam is sufficient to meet India's entire demand four times over.[37]

A massive expansion of nuclear power in India would be required to sustain just one uranium mine in Australia. Assuming Australia's supplies 20% of Indian demand, that demand would need to grow by a factor of 5−6 to sustain one Australian mine producing 1,000 tU annually.

The DFAT/ASNO National Interest Analysis states that by 2020, India will require up to 2,000 tonnes of uranium oxide each year in order to fuel its reactors. That is unlikely, but even if it eventuated, and Australia supplied 20% of that demand, it would amount to just 400 t U3O8 − around 10% of the annual production at Olympic Dam.

Claims that the Agreement will indirectly boost bilateral trade by fostering trust and goodwill ignore readily-available facts. Bilateral trade grew from $3.3 billion at the turn of the century to more than $20 billion in 2011[38], despite Australia's ban on uranium exports to India and other countries that have not signed the NPT. Since the uranium policy was overturned in 2011, bilateral

[31] www.cigionline.org/publications/2009/12/indian-nuclear-industry-status-and-prospects
[32] www.cigionline.org/publications/2009/12/indian-nuclear-industry-status-and-prospects
[33] www.smh.com.au/business/labor-left-concedes-defeat-on-uranium-ban-20111115-1ng6t html
[34] www.world-nuclear.org/info/Facts-and-Figures/World-Nuclear-Power-Reactors-and-Uranium-Requirements/
[35] www.world-nuclear.org/info/Country-Profiles/Countries-A-F/Australia/
[36] Based on the World Nuclear Association's 2013 figure of $A96.2/kg U3O8 which equates to $A113.4/kg U.
[37] www.world-nuclear.org/info/Country-Profiles/Countries-A-F/Appendices/Australia-s-Uranium-Mines/
[38] Prof. Purnendra Jain, 6 Oct 2012, 'Gillard's Delhi challenge: win over India and get the PM down under', http://theconversation.edu.au/gillards-delhi-challenge-win-over-india-and-get-the-pm-down-under-10117
See also http://afr.com/p/national/uranium_controls_point_to_india_SPHEIh9EnBRCRjUk9yzDYM

trade has gone backwards and now stands at around $15 billion[39] (the Foreign Minister puts the current figure at $16 billion[40]).

4. CLIMATE CHANGE AND INDIA'S ENERGY OPTIONS

Claims that Australian uranium sales to India would reduce greenhouse emissions rest on the assumption that more greenhouse-intensive energy sources are displaced by nuclear power. However, there is no reduction in greenhouse emissions if Australian uranium simply displaces uranium from other sources (leaving aside minor differences in emissions associated with mining etc.). And there is no reduction in emissions if nuclear power displaces low-carbon renewable energy sources or energy efficiency and conservation measures.

Leonard Weiss, a former staff director of the US Senate Subcommittee on Energy and Nuclear Proliferation and the Committee on Governmental Affairs, discussed India's energy supply options in the *Bulletin of the Atomic Scientists*:[41]

> *"India's Bureau of Energy Efficiency reports that, in the industrial sector alone, more efficient use of energy could conserve 15 GWe of electricity a year. Further improvements in end-use efficiency of household appliances could save another 3-5 GWe. That means an aggressive program of improved energy efficiency could substitute for all the future power output from nuclear reactors currently being planned in India between now and 2020.*
>
> *"[A]ccording to India's own picture of what its power production would look like if it were to achieve energy independence by 2030, most of such production would not come from nuclear power. Under this scenario, the projected level of electric power production would be 456 GWe and would still be fueled mainly by coal (43.8 percent), followed by hydro (22 percent), renewables (27.6 percent), and, finally, nuclear (6.6 percent). It is clear that India does not see nuclear power as the solution to its energy problems for the next 25 years. ...*
>
> *"According to a study by the international management consulting firm Frost and Sullivan, India's untapped electrical generating capacity is 150 GWe from hydro (the equivalent of 150 large nuclear plants), 85 GWe from biomass, and 45 GWe from wind power. ...*
>
> *"All of these facts lead to the conclusion that the [US] nuclear deal with India is the wrong deal with the wrong energy source at the wrong time. ... A more appropriate energy agreement would concentrate on developing India's indigenous resources in the areas of hydro, wind, biomass and solar; assist in improving end-use efficiency; and aid planning for more distributed generation."*

Mian and Ramana write:[42]

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[39] Mark Kenny, John Garnaut, and David Wroe, 18 Nov 2014, 'Australia and India sign new security pact and commit to a future free trade agreement', www.smh.com.au/federal-politics/political-news/australia-and-india-sign-new-security-pact-and-commit-to-a-future-free-trade-agreement-20141118-11oxir.html
See also:
www.theguardian.com/world/2014/sep/05/tony-abbott-uranium-india
www.smh.com.au/federal-politics/political-news/australia-to-power-indias-energy-market-as-tony-abbott-settles-terms-for-uranium-trade-20140905-10cq6y.html

[40] http://foreignminister.gov.au/speeches/Pages/2014/jb_sp_141028.aspx

[41] Leonard Weiss, May/June 2006, "Power points", Bulletin of the Atomic Scientists, vol. 62, no. 3, http://thebulletin.org/2006/may/power-points

[42] Zia Mian and M. V. Ramana, January/February 2006, 'Wrong Ends, Means, and Needs: Behind the U.S. Nuclear Deal With India', Arms Control Today, www.armscontrol.org/act/2006_01-02/JANFEB-IndiaFeature

> *"A 2003 study by the Confederation of Indian Industry found that there is great scope for improving Indian energy intensity (energy consumption per unit of gross domestic product), which is high compared to other countries, and called for increased cooperation with the United States in this area. It has been estimated that Indian industry could save as much as 20-30 percent of its total energy consumption and that nearly 30,000 megawatts, i.e., more than the total planned nuclear capacity by 2020, could be saved through energy conservation programs. This would also be cheaper than building new generating capacity, especially additional nuclear capacity. This study also noted that, in the 1999 Indo-U.S. Joint Statement on Cooperation in Energy and Related Environmental Aspects, India had declared a goal of a 10 percent share for renewable energy by 2012 and a 15 percent improvement in energy efficiency by 2008 and was seeking U.S. help to meet these targets.*
>
> *"The real challenge facing India is the growing divide between the energy-intensive pattern of development of its cities, with increasing demands for electricity and petroleum, and the continuing dependence on fuel-wood and animal-dung energy by the majority who live in its many villages. Nuclear energy as a large, centralized, and costly source of electricity will do little for meeting the basic energy needs of rural India because connecting these areas to a central power grid is expensive, involves high transmission losses, and is financially unsustainable. The UN Development Program's World Energy Assessment in 2000 observed that "past efforts to deliver modern energy to rural areas have often been ineffective and inefficient" and that, "above all, planning for rural energy development should have a decentralized component and should involve rural people—the customers—in planning and decision-making." By working with the rural poor, it may be possible at last to develop and provide the small-scale, local, sustainable, and affordable energy systems that they need."*

The nuclear industry and its supporters assert that renewable energy sources cannot provide reliable, baseload electricity. A 27 July 2007 editorial in *The Australian* lambasts "wealthy, First World greenies [who] fail to acknowledge is that nuclear power is the only existing technology that can provide base-load power without increasing greenhouse gas emissions and that it is essential to clean development in the Third World." But in fact, several renewable energy sources can provide baseload power – such as bioenergy, geothermal 'hot rocks', solar thermal electricity with storage, and in some cases hydroelectricity.[43] Moreover, India's nuclear power reactors run at well short of 100% capacity, and only part of that problem has arisen from limited uranium supplies.

The former Director General of the IAEA, Dr Mohamed El Baradei, has stated that off-grid, small-scale, localised renewables are the best power solutions for the rural poor in developing countries.[44]

WWF-India and The Energy and Resources Institute conclude in a detailed 2013 report that as much as 90% of India's total primary energy supply could be based on renewable sources by mid-century.[45] The Executive Summary states:

> *"This study examines the possibility of a 100% Renewable Energy Scenario for India by 2051. Two scenarios are developed for this purpose; the Reference Energy Scenario (REF) is compared with the Renewable Energy Scenario (REN) with the intent of examining what changes would be required to move toward a 100 per cent (or near-100 per cent) renewable*

See also Divya Badami Rao and M. V. Ramana, 3 July 2008, 'The Indian approach to climate and energy policy', http://thebulletin.org/indian-approach-climate-and-energy-policy

[43] Mark Diesendorf, 2007, "The Base Load Fallacy", EnergyScience Briefing Paper #16, www.energyscience.org.au

[44] Quoted in John Vidal, 12 Aug 2004, 'Nuclear plants bloom', www.guardian.co.uk/life/feature/story/0,13026,1280884,00.html.

[45] www.wwfindia.org/news_facts/?10261

scenario, and whether the country is likely to have the adequate technical potential for moving toward such a transformational change in its energy mix. The REF scenario considers only current trends and policies, and projects these into the future as determinants of energy demand and supply. This scenario includes all current forms of energy – fossil-based, nuclear and renewable – while in the REN scenario, fossil fuels and nuclear-based technologies are phased out and replaced, wherever possible, with renewable options. No new capacity additions of fossil fuel or nuclear-based technologies are considered, except for the ones that are already under construction. Moreover, aggressive efficiency improvements are envisaged in the REN scenario across the entire energy system.

The study suggests that a sustainable, renewable-energy-based economy could theoretically be achieved, where as much as 90 per cent of India's total primary energy supply could technically be based on renewable sources. The remaining 10 per cent would still need to be fuelled by fossil-based sources that are required as feedstock and where a substitution by renewable energy forms is not possible.

In the REF scenario, the economy is likely to remain based primarily on coal, oil and gas. In the REN scenario, solar, wind and hydro are considered to be the main fuels for electricity generation, while second-generation and algal biofuels contribute to meet demands of the transport sector.

Some of the key observations from this study are highlighted below.

- *Aggressive efficiency improvements across the energy demand and supply sides bring in large savings – of the order of 59 per cent – by 2051.*
- *On the supply side, fossil-based plants and technologies need to be phased out in the REN scenario much before the end of their economic lifetime (against the current situation, where old and inefficient plants continue to operate beyond their economic life to meet shortfalls in demand and supply). All renewable energy forms including solar, wind, geothermal and ocean tidal energy resources need to be pushed to their technical limits to achieve a move toward a 100% REN scenario.*
- *Biofuels would need to play a key role by 2051; they would have to account for 330 Mtoe and meet 90 per cent of the transport fuel requirement in order to move toward the REN scenario.*
- *Around 10 per cent of the fuel mix would need to be meet by fossil fuels for niche uses such as feedstock in industry, for which there is currently no replacement.*
- *Concentrated solar thermal technologies (that are still in the R&D phase) would need to play a key role in meeting electricity needs as well as the thermal demand in industries (and also to fulfill the heat requirement for temperatures below 700°C).*
- *Energy requirements for cooking would need to shift towards electric cooking in urban areas and improved cookstoves in rural areas, irrespective of individual preferences and lifestyle choices of the households.*
- *The import dependency of coal and oil rise in the future for both scenarios. However, while in the REF scenario this is because the domestic production is unable to keep pace with the demand, in the REN scenario this is because the requirement of these fuels is so low that all domestic production is stopped and the small requirement is entirely imported. Only gas production continues into the future as it has a comparably higher use, and the import dependency drops from 21 per cent in 2011 to 13 per cent in 2051.*
- *The cumulative CO2 emissions in the REN scenario are about one-third of those in the REF scenario.*
- *The total undiscounted technology investment cost for the REN scenario is 42 per cent higher than in the REF scenario, requiring an additional investment of INR 544 trillion between 2011 and 2051. This level accounts for around 4 per cent of the cumulative*

> *GDP during this period. The total undiscounted system costs in the REN scenario are only 10 per cent higher than those in the REF scenario. This, however, includes only technology-level substitutions and does not entail costs that may need to be incurred for supporting infrastructure, R&D or improvements in regulatory and institutional set-ups."*

The World Nuclear Industry Status Report 2013 notes that:[46]

- China, Germany and Japan, three of the world's four largest economies, as well as India, now generate more power from renewables than from nuclear power.
- For the first time, China and India generated more power from wind than from nuclear plants in 2012.

M.V. Ramana nots that the total generating capacity of non-hydro renewable energy projects is 31.7 GW − 12.6% of total generating capacity.[47] Hydropower capacity is 40.7 GW − 16% of the total. Thus the total installed renewable capacity is 72.4 GW − over 13 times greater than installed nuclear capacity of 5.3 GW.

5. ACCIDENTS AND ATTACKS

Accidents

A 27 July 2007 editorial in *The Australian* argued that the US−India deal would give India "access to the most advanced nuclear energy technology in the world, making its civilian nuclear power plants far safer."[48] However Squassoni notes that India could take advantage of the NSG exception for safety-related issues prior to the US−India deal.[49]

Key determinants of risk − namely the safety culture; expertise and training; and rigorous, independent regulatory oversight − are all lacking in India. Ramana notes:

> *"Practically all nuclear reactors and other facilities associated with the nuclear fuel cycle operated by the [DaE − Department of Atomic Energy] have had accidents of varying severity. The description of some accidents offers a sense of the lack of importance given to nuclear safety by the DaE. This history suggests the organization cannot be trusted to safely manage hazardous technologies. ...*
>
> *"The DaE claims safety is its primary concern, but it has been a low priority, as demonstrated by India's history of small accidents, unsafe design choices and operating practices. The DaE's obsession with secrecy inhibits independent studies of the complex. The agency in charge of regulating safety at nuclear facilities comes under the administrative control of the [Atomic Energy Commission], and is therefore not truly independent."*[50]

Inadequate safety standards and inadequate regulation

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[46] www.worldnuclearreport.org/IMG/pdf/20130716msc-worldnuclearreport2013-lr-v4.pdf
[47] M.V. Ramana, JSCT submission, www.aph.gov.au/DocumentStore.ashx?id=f62427a7-3868-4801-bd3d-c08a9d0d451c&subId=301940
[48] www.theaustralian news.com.au/story/0,25197,22140725-16382,00.html
[49] Sharon Squassoni, June 26, 2006, "U.S. Nuclear Cooperation with India: Issues for Congress", Congressional Research Service Report Number: RL33016, http://digital.library.unt.edu/govdocs/crs/permalink/meta-crs-9399
[50] M.V. Ramana, 2009, 'The Indian Nuclear Industry: Status and Prospects', www.cigionline.org/publications/paper-series/nuclearenergyfutures

India's nuclear safety regime is "fraught with grave risks" according to a bipartisan 2013 report by India's Public Accounts Committee.[51] The report says that India's nuclear regulator is weak and under-resourced. The parliamentary committee noted that the Atomic Energy Regulatory Board (AERB) is not an independent statutory body but rather a subordinate agency of the government.

"The failure to have an autonomous and independent regulator is clearly fraught with grave risks, as brought out poignantly in the report of the Fukushima Nuclear Accident Independent Investigation Commission," the report states. "Although AERB maintains liaison with international nuclear organisations, it has been slow in adopting international benchmarks and good practices in the areas of nuclear and radiation operation."

The regulator cannot set or enforce rules for radiation and nuclear safety in India, the committee found. In many cases there are no rules. Despite an order from the government in 1983, the AERB has still not developed an overarching nuclear and radiation safety policy for India. "The absence of such a policy at macro level can hamper micro-level planning of radiation safety in the country," the report states. As a result, India is poorly prepared for a nuclear emergency.

"Off-site emergency exercises carried out highlighted inadequate emergency preparedness even for situations where the radiological effects of an emergency origination from nuclear power plants are likely to extend beyond the site and affect the people around," the report states.

The maximum fine the AERB can impose for violations of law is 500 rupees − "abysmally low" according to the committee.

The report by the Public Accounts Committee reinforces concerns raised by the government auditor-general, who found in 2012 that 60% of regulatory inspections for operating nuclear power plants in India were either delayed − with some up to 153 days late − or not undertaken at all. For power plants under construction, the number of regulatory inspections delayed or not undertaken was 66%. Smaller radiation facilities operate across the country with no licences and no oversight at all.[52]

Raju and Ramana noted in a 2012 article:

> *"If anything, the risk of a nuclear accident in India is likely to be higher than elsewhere because of weaknesses in the Atomic Energy Regulatory Board (AERB). As the Comptroller and Auditor General pointed out in its recent scathing report, the AERB remains "subordinate to the Central Government," which also operates all nuclear plants in India. The CAG report also stated that the AERB had failed to develop a mechanism to ensure regulatory compliance or oversee the procedures for radiological emergencies."*[53]

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[51] Ben Doherty, 20 Dec 2013, 'Harsh criticism for India's nuclear safety regime', www.smh.com.au/world/harsh-criticism-for-indias-nuclear-safety-regime-20131220-hv6lz html

[52] Report No 9 of 2012/13 of the Comptroller and Auditor General on the activities of the Atomic Energy Regulatory Board.
Ben Doherty, 15 Oct 2012, 'India questions its own nuclear industry', www.theage.com.au/opinion/political-news/india-questions-its-own-nuclear-industry-20121014-27l0a html
See also:
M.V. Ramana, 16 Oct 2012, 'India's nuclear power failures warn against uranium exports', http://theconversation.edu.au/indias-nuclear-power-failures-warn-against-uranium-exports-10131
M.P. Ram Mohan, 23 Aug 2011, 'How safe is India's nuclear energy programme?', www.livemint.com/2011/08/22202845/How-safe-is-India8217s-nucl.html?h=B
Abhishek Gaba, 20 May 2011, 'Overhaul over India's Civil Nuclear Developments', http://thegaba.blogspot.com.au/2011/04/indias-civil-nuke-developments-must html

[53] Suvrat Raju and M.V. Ramana, 19 Sept 2012, 'Where the mind is full of fear', www.thehindu.com/opinion/lead/where-the-mind-is-full-of-fear/article3911903.ece

The Australia−India Agreement notes that both countries are Parties to the Convention on Nuclear Safety. But is India compliant with the Convention? M.V. Ramana states:

> *"A basic tenet of regulation is that the safety regulator must be independent of industry and government. Article 8 of the international Convention on Nuclear Safety, which India has signed and ratified, calls upon signatories to "take the appropriate steps to ensure an effective separation between the functions of the regulatory body and those of any other body or organisation concerned with the promotion or utilisation of nuclear energy"."*[54]

M.V. Ramana states:

> *"At first glance the AERB does seem independent of the department of atomic energy (DAE) and the NPC [Nuclear Power Corporation]. It reports to the Atomic Energy Commission (AEC) rather than the DAE. The problem, as the CAG [Comptroller and Auditor General] observed, arises from the "fact that the chairman, AEC and the secretary, DAE are one and the same" and this fact "negates the very essence of institutional separation of regulatory and non-regulatory functions" (p 12). The chairman of the NPC is also a member of the AEC. Another significant constraint on the AERB's activities is that the organisation "is dependent on DAE for budgetary and administrative support" (p 13). What all this means, in effect, is that despite all pretences and claims to the contrary by the DAE and its attendant institutions, the AERB lacks power and independence. ... The lack of separation is not an accident, but a choice made by the nuclear establishment."*[55]

M.V. Ramana points to problems with the Nuclear Safety Regulatory Authority (NSRA) Bill of September 2011:

> *"[J]just because the AERB is to be replaced by the NSRA – assuming, of course, that the government manages to get it through Parliament – should we be confident of the safety of the DAE's nuclear facilities? The underlying problem highlighted by the CAG is not just the legal status, but one of effectiveness. And looking at the content of the bill and the context under which the NSRA has been created, it seems unlikely that it will create an effective separation between the regulatory authority and the nuclear establishment. In the NSRA as has been envisioned, many of the key processes involved in ensuring effective regulation will continue to be controlled by the AEC. The power for crucial steps like the appointment of members is vested with the central government. But for most purposes, the authority empowered to act on behalf of the central government is the AEC. The AEC chairman will also be one of the key members of the Council of Nuclear Safety that will set the policies with respect to radiation and nuclear safety that will fall under the purview of the NSRA."*[56]

M.V. Ramana notes in his JSCT submission:

> *"Despite improvements in reactor technology, the probability of such catastrophic accidents remains stubbornly greater than zero. This poses extreme organizational demands, which are not met by India's Department of Atomic Energy (DAE) and its related entities. Most nuclear facilities in the country have experienced small or large accidents although, fortunately, none of these has been catastrophic. Many of these were caused by inattention to recurring problems or other warnings; to the extent that those responsible for safety have tried to fix them, they have not always been successful. Compounding this state of affairs is*

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[54] M.V. Ramana, 29 Sept 2012, 'Flunking Atomic Audits: CAG Reports and Nuclear Power', Ecoomic & Political Weekly, Vol XLVII No. 39, www.epw.in/system/files/pdf/2012_47/39/Flunking_Atomic_Audits.pdf (available from jim.green@foe.org.au)

[55] M.V. Ramana, 29 Sept 2012, 'Flunking Atomic Audits: CAG Reports and Nuclear Power', Ecoomic & Political Weekly, Vol XLVII No. 39, www.epw.in/system/files/pdf/2012_47/39/Flunking_Atomic_Audits.pdf (available from jim.green@foe.org.au)

[56] M.V. Ramana, 29 Sept 2012, 'Flunking Atomic Audits: CAG Reports and Nuclear Power', Ecoomic & Political Weekly, Vol XLVII No. 39, www.epw.in/system/files/pdf/2012_47/39/Flunking_Atomic_Audits.pdf (available from jim.green@foe.org.au)

an absurd confidence that DAE leaders have publicly expressed − and have likely internalized − in the safety of nuclear facilities in the country. This has often taken the form of asserting that the probability of a nuclear accident in India is zero, something that was frequently heard in the aftermath of Fukushima. Worse, on 15 March, 2011, the Chairman of Nuclear Power Corporation of India Limited reassured the public saying "there is no nuclear accident or incident in Japan's Fukushima plants. It is a well planned emergency preparedness programme which the nuclear operators of the Tokyo Electric Power Company are carrying out to contain the residual heat after the plants had an automatic shutdown following a major earthquake." Such denial would be laughable but when the person thus opining is in charge of India's power reactor fleet, it ceases to be amusing."[57]

Smita Nair wrote about emergency preparedness in October 2014:[58]

"A nuclear emergency should set off what' called a Level 3 response — involving the country's defence, paramilitary, police and government agencies all the way from the Centre to the taluka. The National Disaster Management Agency had prepared a structured document, providing precise directions on rescue, decontamination and evacuation, to be administered in real-time by control rooms at the Ministry of Home Affairs in New Delhi and in the states.

The reality is that Maharashtra doesn't actually have a set of operating procedures in place, which would govern all organisations in a crisis. The SOPs [Standard Operating Procedures' of three agencies that The Indian Express accessed showed overlaps, while one at the state level hadn't been updated since 2005. The State Relief and Rehabilitation Office has asked all concerned agencies, from police and essential services to traffic, to prepare a single SOP for various situations. It is currently working on one for railway strikes.

"We have kept streamlining the SOP for mega-disasters like terror attack in a nuclear reactor for last as the number of agencies involved is huge," an official explained.

To make an SOP work, it'll need an effective control room. The Maharashtra secretariat's control room, run by the SRRC, does not have a single professional disaster expert — just staff on deputation from various departments like general administration, irrigation and animal husbandry. The position of the nodal officer, the Director of State Relief and Rehabilitation, has not been occupied for 45 days. Two crucial posts, the capacity-building officer and resource coordinator, do not exist.

Nuclear Power Corporation of India Limited, which operates all the 19 nuclear power plants, takes safety seriously, operating a 'defence-in-depth' strategy involving multiple layers of concrete protection and electronic systems. After the 9/11 terror attack, the new age reactors were given another coat of security, to ensure that they are missile-proof. Emergency preparedness drills are conducted every two years, along with the district administration.

Yet, a 2011 emergency census document obtained by The Indian Express shows that there will be real problems should a large crisis emerge. A population of 2,98,573 people will have to be evacuated in an extreme emergency, not counting the swelling floating population in the area. The 2011 exercise found that there were limited evacuation modes

[57] www.aph.gov.au/DocumentStore.ashx?id=f62427a7-3868-4801-bd3d-c08a9d0d451c&subId=301940
[58] Smita Nair, 21 Oct 2014, 'Nuclear disaster: Control rooms with no bosses, hotline turned cold', http://indianexpress.com/article/india/india-others/nuclear-disaster-control-rooms-with-no-bosses-hotline-turned-cold/99/

and ground routes, due to area demographics and its proximity to sea. NPCIL and NDRF teams too have pointed to the lack of check on increasing density around the site, which is against the AERB norms.

Things which work well during drills — of which populations are warned for weeks — don't always work when the exercise is over. An out-of-routine check to the State Transport Bus office at night by an official saw that 18 buses were available for evacuation near a reactor — but no drivers. Another official at the State Health Department confessed that while medicine keeps getting updated and stocked at all hospitals around the site, there is a lack of expertise in treating radiation-related conditions. No-one knows what impact modern communication means, like the social media, will have: it has never been factored in during exercises.

The police, key to handling the hundreds of thousands who will need evacuating, haven't shown great skills with panicked people: 18 had died in a stampede outside the gates of Mohammed Burhanuddin, spiritual leader of Dawoodi Bohra Muslim community, hours before his funeral in January, 2014.

In many cases, there's an unwillingness to consider low-probability events — the ones that actually cause the most fatalities. Last year, fired by news from Japan's Fukushima disaster, the civic administration approached NPCIL with a "core meltdown" theme for mock drill exercise. The scientist community shot it down, suggesting that a drill should be of "probable events" and not "unfounded situations borrowed from reactors abroad"."

Attacks

Nuclear expansion in India (and Pakistan) will increase the risks of attacks on nuclear plants.

There is a long history of conventional military strikes and attempted strikes on nuclear plants in the Middle East − the destruction of reactors in Iraq by Israel and the US; Iran's attempts to strike nuclear facilities in Iraq during the 1980-88 war (and vice versa); Iraq's attempted strikes on Israel's nuclear facilities; and, most recently, Israel's bombing of a suspected nuclear reactor site in Syria in 2007. In the Middle East, attacks have targeted small research reactors and related facilities and the aim has been to curb or prevent weapons proliferation. In the case of nuclear power plants (or reprocessing facilities), attacks (by an adversarial nation-state or sub-national group) could also serve other purposes − spreading radioactive contamination far and wide, and/or disrupting electricity supply.

Data compiled by the Worldwide Incidents Tracking System of the US National Counterterrorism Center show that terrorist incidents are far more common in India and Pakistan than in any other countries. In India, there were 4,462 terrorist incidents over a five-year period to 2010; in Pakistan, 3,687.[59] To give just one recent example involving nuclear material, transport of uranium to the Uranium Corporation of India Ltd processing plant was suspended in May after an ore-laden truck was torched by Maoists. Fifteen armed people pulled the driver down from the vehicle and then set it ablaze.[60]

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[59] The information is behind a paywall but for a list of many thousands of incidents in India, see: http://web.archive.org/web/20111015023452/https://wits.nctc.gov/FederalDiscoverWITS/index.do?Rd=Country|4294966898|India&N=0

[60] www.dnaindia.com/india/report-maoists-set-truck-carrying-uranium-for-ucil-ablaze-1986317
http://timesofindia.indiatimes.com/city/ranchi/Suspension-of-ore-transportation-hits-uranium-work-at-UCIL/articleshow/34961281.cms
http://timesofindia.indiatimes.com/city/ranchi/Frequent-threats-from-rebels-worry-UCIL-officials/articleshow/29483709.cms

The JSCT may wish to ask DFAT/ASNO to supply a list of all terrorism incidents in India over the past 5−10 years involving nuclear materials, and perhaps also a list of all incidents threatening power plants and associated infrastructure (e.g. transmission infrastructure).

In 2009, India tightened security and put its nuclear power plants on alert in some states after intelligence about possible attacks. An official from the home ministry said: "The states have been asked to increase the vigil and patrolling to thwart any sabotage attempt aimed at these vital facilities."[61]

The Terrorism Research & Analysis Consortium notes that: "India is now facing a very complex terrorist threat both from religious extremists and secular groups. India ranks among the world's most terrorism-afflicted countries."[62]

Nuclear weapons plants in Pakistan have reportedly been targeted by al Qaeda over the past decade[63] although others claim the plants were non-nuclear plants.[64]

John Carlson notes in his JSCT submission: "India is proposing to produce substantial quantities of weapons-grade plutonium, using unsafeguarded as well as safeguarded facilities, as part of its "civilian" program. This plutonium is seen as a strategic threat by Pakistan, exacerbating tensions between the two countries, and it will also present a serious terrorism risk."

Nuclear Security

The Australia−India Agreement states: "In addition to its obligations under the Convention on the Physical Protection of Nuclear Material, done at Vienna on 3 March 1980 and as amended and in force for each Party from time to time, each Party shall apply the recommendations of the Agency document INFCIRC/225/Rev.5 entitled, "Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities".

Foreign Minister Julie Bishop told Parliament on 28 October 2014: "India will ensure the security of Australian nuclear material in accordance with relevant broader international conventions and standards—the same conventions and standards that apply in Australia's dealings with other bilateral nuclear partners including the United States, Japan, Canada, and the EU."[65]

However there are reasons to be concerned about the adequacy of nuclear security in India and JSCT may wish to explore this issue rather than accepting the assurances of the government. At the Nuclear Security Summit (NSS) in the Netherlands in March 2014, 35 countries endorsed a statement saying they will incorporate IAEA nuclear security guidelines into national legislation, and host 'peer reviews' of national nuclear security policies and practices. Notable non-signatories included China, India, Pakistan, and Russia.[66] Twenty-three states endorsed a statement concerning enhancing radiological security − notable non-signatories included Russia, India, Pakistan, and China.[67]

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[61] http://itn.co.uk/273f5e17bf168aa7c47aac785cf49b30 html
[62] www.trackingterrorism.org/region/india
[63] www.telegraph.co.uk/news/worldnews/asia/pakistan/6011668/Pakistans-nuclear-bases-targeted-by-al-Qaeda.html
[64] www.guardian.co.uk/world/2009/aug/12/pakistan-nuclear-al-qaida
[65] http://foreignminister.gov.au/speeches/Pages/2014/jb_sp_141028.aspx
[66] www.nss2014.com/sites/default/files/documents/strengthening_nuclear_security_implementation.pdf
[67] 24 March 2014, 'Statement on Enhancing Radiological Security',
www.whitehouse.gov/the-press-office/2014/03/24/statement-enhancing-radiological-security
See also Matthew Bunn, 25 March 2014, 'Leaders Agree on New Initiative on Radiological Source Security',
http://nuclearsecuritymatters.belfercenter.org/blog/leaders-agree-new-initiative-radiological-source-security

India is not a participant in the Proliferation Security Initiative.[68]

6. WEAPONS PROLIFERATION

6.1 SAFEGUARDS

The IAEA used to provide aggregate data on the number of inspections carried out in India, Israel and Pakistan but no India-specific information. From 2005-09, 44–50 safeguards inspections were carried out each year in those three countries (combined), and the figure increased to 67 in 2010. Since then, the IAEA has released no figures whatsoever on the number of inspections carried out in the three countries combined, and no figures on the number of inspections carried out in India alone.[69] That secrecy is indefensible. The JSCT should recommend against ratification of the Australia−India Agreement unless (among other conditions) details are publicly released on an annual basis regarding the number of IAEA inspections, the locations inspected (and the locations of eligible facilities not inspected) and other relevant details.

During a March 2006 media conference with Condoleezza Rice, then Prime Minister John Howard falsely claimed that the US−India deal would bring India's nuclear program under international inspections "for the first time". Mr Downer said in July 2007 that "... we have not been selling uranium to India over the years because India has not been subjected to International Atomic Energy safeguards." However, six reactors in India were already subject to safeguards under facility-specific arrangements.

The value of extending safeguards is deeply compromised by the prevailing circumstances − safeguards apply only to that part of the nuclear program that India considers surplus to military 'requirements'.[70] There is nothing in the US−India deal (or the Australia−India Nuclear Cooperation Agreement) to stop India building new, unsafeguarded reactors or other facilities for its weapons program.

Then IAEA Director General Mohamed El Baradei noted in 2008 that the safeguards agreement with India did not provide for comprehensive or full-scope safeguards. [71] He further noted that safeguards will apply only to facilities notified by India − in other words, India is free to build new facilities for its weapons program.

Reuters cited a diplomat involved in 2009 India−IAEA negotiations stating that the safeguards agreement "contains no provisions to ensure India cannot divert into its military nuclear sector nuclear materials and know-how it obtains abroad for the civilian sector."[72]

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[68] www.armscontrol.org/factsheets/indiaprofile
[69] See the IAEA's annual Safeguards Statements: www.iaea.org/safeguards/publications_news/es/es2013 html
[70] Daryl Kimball, Fred McGoldrick, and Lawrence Scheinman, 30 July 2008, IAEA-Indian Nuclear Safeguards Agreement: A Critical Analysis, www.armscontrol.org/node/3205
[71] Mohamed ElBaradei, 1 August 2008, Introductory Statement to the Board of Governors, www.iaea.org/NewsCenter/Statements/2008/ebsp2008n006 html
[72] Mark Heinrich, 4 March 2009, IAEA approves extra nuclear inspection pact for India, http://in.reuters.com/article/domesticNews/idINL36577120090303?sp=true
See also:
IAEA Board of Governors, 9 July 2008, 'An Agreement with the Government of India for the Application of Safeguards to Civilian Nuclear Facilities', www.isis-online.org/publications/southasia/India_IAEA_safeguards.pdf
IAEA, 1 August 2008, 'IAEA Board Approves India-Safeguards Agreement', www.iaea.org/NewsCenter/News/2008/board010808 html

The IAEA makes no effort to systematically monitor nuclear facilities and materials in declared nuclear weapons states − safeguards inspections in those states are at best tokenistic (e.g. China[73]) or at worst nearly non-existent (Russia[74]). Will the situation be any better in India?

India and the IAEA have negotiated not only a basic safeguards agreement but also an 'Additional Protocol'. Theoretically, an Additional Protocol provides expanded inspection rights and reporting requirements. A 2009 IAEA document indicates that safeguards will be limited and subject to the vagaries of the IAEA's chronically overstretched budget: "The [IAEA] Board of Governors will be aware that the Agency will not mechanistically or systematically seek to verify information obtained under Additional Protocols. The verification activities in question are not linked to quantitative yardsticks such as inventories of nuclear materials. Therefore, the Secretariat cannot provide precise estimates of those costs of implementing each Additional Protocol concluded. The volume of activities relevant in this regard will depend on case by-case decisions taken within the authority conferred upon the Agency by the Additional Protocol and subject to the overall budgetary appropriations for safeguards implementation."[75]

The 2009 IAEA document also states: "The frequency and intensity of IAEA inspections shall be kept to the minimum consistent with the aim of improving safeguards." That statement appears to suggest that safeguards will be rare or non-existent except in circumstances where the IAEA wants to test novel safeguards technologies or procedures and India agrees to take part.

On the other hand, John Carlson states in his JSCT submission: "A positive feature of this agreement, compared with safeguards in the five NPT nuclear weapon states, is that the IAEA actively inspects all facilities and materials under the [India-IAEA] agreement (in the nuclear-weapon states the IAEA inspects only a limited number of facilities it selects for inspection). IAEA policy is to conduct inspections at all facilities under item specific agreements. As more facilities and materials are added to the India agreement, inspections in India will represent an increasingly significant proportion of the IAEA's overall safeguards workload."

Is it true that the IAEA actively inspects all facilities and materials under the India-IAEA agreement? Or is it true, as the 2009 IAEA documents seems to suggest, that inspections will be rare and tokenistic? The JSCT may wish to pursue those questions with DFAT/ASNO, John Carlson and others.

There seems to be no dispute that India's Additional Protocol is scarcely worth the paper it is written on. John Carlson's submission describes it as "the additional protocol to have when you don't want an additional protocol" and he states:

> *"The additional protocol that India eventually concluded, however, is limited to certain nuclear exports, and has no application to any nuclear material or facilities in India." Compared with the Additional Protocols of the declared weapons states, John Carlson states: "India's additional protocol has the narrowest scope of all, applying only to nuclear exports, and providing no information on, let alone access to, any Indian facility. This is totally inadequate compared with the commitment given to apply the additional protocol to civilian facilities. India's additional protocol was meant to have been a positive factor but is in fact an unfulfilled commitment."*

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[73] www.foe.org.au/anti-nuclear/issues/oz/u/cc#china
[74] www.foe.org.au/anti-nuclear/issues/oz/u/cc#russia
[75] Protocol Additional to the Agreement between the Government of India and the International Atomic Energy Agency for the Application of Safeguards to Civilian Nuclear Facilities, 2009, available from jim.green@foe.org.au
See also: INFCIRC/754/Add.6, 1 August 2014, 'The text of the Protocol Additional to the Agreement between the Government of India and the International Atomic Energy Agency for the Application of Safeguards to Civilian Nuclear Facilities'

Further, Arms Control Today reported in April 2009:

> *"[T]he agreement the agency approved omitted many of the key provisions of the Model Additional Protocol regarding the type of information India would provide to the agency and the access that would be granted to agency inspectors. In particular, among the provisions of the Model Additional Protocol on what kinds of activities and facilities a country would report to the agency, India only agreed to share information on nuclear-related exports. Reporting provisions of the model protocol not contained in India's agreement cover information such as nuclear fuel-cycle-related research and development, nuclear-related imports, and uranium mining. The Indian additional protocol also does not include any complementary access provisions, which provide the IAEA with the potential authority to inspect undeclared facilities. Such provisions also allow the agency to carry out environmental sampling. Many of the provisions not included in the Indian additional protocol are intended to provide the agency with the means to detect undeclared nuclear activities."*[76]

Australian uranium sales to India would be subject to the bilateral agreement. However key provisions in bilateral agreements have never once been invoked. Most importantly, no Australian government has ever refused a uranium customer country permission to reprocess spent fuel containing AONM even when that leads to plutonium stockpiling (as it does in Japan and some EU countries).

It is argued that it is better for Australia to supply India to uranium rather than suppliers with less stringent bilateral agreements (or no bilateral agreement). However, the IAEA is tasked with carrying out safeguards regardless of the supplier − and Australia has no independent safeguards capability or authority. Moreover, as mentioned, Australian governments have without exception been unwilling to invoke powers under bilateral agreements to curb plutonium stockpiling.

Even in the event that a rigorous safeguards regime provided confidence that Australian uranium was not used in India's weapons program, that would in no way undo the damage done to the NPT by civil nuclear trade with India.

Even if strict safeguards were in place, uranium sales to India would create an intractable problem: uranium exports freeing up India's domestic reserves for weapons production. K. Subrahmanyam, former head of the India's National Security Advisory Board, has said that: "Given India's uranium ore crunch and the need to build up our minimum credible nuclear deterrent arsenal as fast as possible, it is to India's advantage to categorise as many power reactors as possible as civilian ones to be refuelled by imported uranium and conserve our native uranium fuel for weapons-grade plutonium production."[77]

Crispin Rovere disputes that line of argument in his JSCT submission, stating: "Assertions that exporting Australian nuclear material to India will "free up domestic reserves of uranium" for nuclear weapons are completely wrong. Nuclear energy production requires vastly more uranium ore concentrate than nuclear weapons, and in this context exporting coal to India has exactly the same effect of "freeing up domestic reserves of uranium" as does exporting uranium."

Mr Rovere seems to be arguing that both uranium and coal exports potentially free up India's domestic uranium reserves for weapons production, in which case assertions that uranium exports free up domestic uranium for weapons production are not "completely wrong". Nor is his argument

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[76] Peter Crail, April 2009, 'IAEA Approves India Additional Protocol', www.armscontrol.org/act/2009_04/IndiaProtocol See also the July 2008 analysis by Daryl Kimball et al., www.armscontrol.org/node/3205

[77] Quoted in the Times of India, 12 December 2005.

about the relative amounts of uranium required for civil and military programs compelling since there seems to be agreement that India has insufficient domestic uranium for both programs. In any case there is a simple solution to the problem addressed by Mr Rovere; or at least, the solution is simply stated. If India makes meaningful, verifiable, enforcable commitments to stop expanding its nuclear weapons arsenal, to stop producing fissile material for weapons, to stop expanding its military and dual-use fissile material production capabilities, and if India signs and ratifies the CTBT, then there would be little likelihood of Australia's uranium exports − or its coal exports − contributing to nuclear weapons proliferation in India.

A former diplomat has admitted that the sale of Australian uranium to India would free up that country's domestic reserves for military purposes. When asked if Australian uranium would free up India's reserves for military use, former Australian Deputy High Commissioner to India Rakesh Ahuja said: "That has always been the case, yes."[78]

Proponents of nuclear trade with India argue that it will bring 64% (14/22) of India's reactors under safeguards. But it does not curtail India's nuclear weapons program by 64% − it does not curtail India's weapons program at all. Nuclear trade an envisaged under the US-India Agreement and the Australia−India Agreement will do more to facilitate India's nuclear weapons program than to curtail it. Indeed it is by no means clear that the US (and perhaps also the Australian government) has any interest in curtailing India's nuclear weapons program. Arthur Tellis from the Carnegie Endowment for International Peace (and previously the US National Security Council) expresses a view which appears to have considerable support in Washington. He argues that integrating India into the nonproliferation order at the cost of capping the size of its nuclear arsenal "threaten[s] to place New Delhi at a severe disadvantage vis-à-vis Beijing, a situation that could not only undermine Indian security but also U.S. interests in Asia in the face of the prospective rise of Chinese power over the long term."[79]

Finally, given the political volatility of the South Asian region, it is worth noting that there are several examples of safeguards being suspended in the event of conflict between states or conflict within a state (including Yugoslavia, Iraq, and some African states). The JSCT may wish to ask DFAT/ASNO whether Ukraine provides another example of safeguards being restricted or suspended, as a result of the current conflict there.

6.2 TRACKING AONM AND THE ADMINISTRATIVE ARRANGEMENT

The importance of tracking AONM, and the woeful inadequacy of the Agreement with respect to tracking, or dealt with in great detail in John Carlson's submission − a few brief excerpts follow:

> *"Weaknesses in the Australia-India agreement could be exploited – in particular, if AONM is not identified and accounted for as such, the conditions of the agreement will be readily evaded ... Australia's standard safeguards requirements are essential in their entirety for closing off opportunities and temptations, and for providing confidence that the agreement will not be circumvented. ...*
>
> *"If it is not possible to identify which batch of material is covered by which bilateral agreement, then India can work a pea and thimble trick with foreign-sourced material, being able to assure each of its agreement partners that none of their material is involved in activities proscribed by the respective agreement. The mere possibility of this situation is*

[78] 26 Aug 2013, 'Selling uranium to India 'would lead to military use', www.sbs.com.au/news/article/2013/04/29/selling-uranium-india-would-lead-military-use
[79] Ashley J. Tellis, July 2005, 'India as a New Global Power: An Action Agenda for the United States', Carnegie Endowment Report, www.carnegieendowment.org/publications/index.cfm?fa=view&id=17079

> *sufficient to call into question India's commitment to observing our agreement, and emphasises the need for Australia to proceed with caution. ...*
>
> *"Government must be prepared to make it clear to the Indian government that proper accounting and tracking arrangements are legal requirements and as such are not negotiable. The Government should proceed no further with the agreement unless it can give an assurance that Australia's longstanding requirements on accounting for and tracking AONM will be met in full (and not dealt with through some sleight of hand on "equivalent" information)."*

The JSCT ought to consider the Administrative Arrangement before issuing recommendations for or against ratification of the Australia−India Agreement − which necessarily involves waiting until the Administrative Arrangement has been concluded between Australia and India.

Mr Carlson states in his JSCT submission:

> *"The administrative arrangement is a document of critical importance, as it will determine the interpretation of the agreement. Depending on the content of the administrative arrangement, it could effectively negate the whole agreement. The fact that the administrative arrangement is not available to JSCOT, and might never be available, presents a serious issue in terms of JSCOT's review of the agreement. ... If the various obligations under the agreement cannot be linked to specific material, it will not be possible for India to meet these obligations, nor for Australia to tell if in fact they are being met. This is the meaning of Article III.5, requiring each party to maintain a system of accounting for and control of material subject to the agreement."*

The importance of this problem is further underscored by Mr Carlson's statement that: "The nuclear material under this agreement will be usable for nuclear purposes for hundreds, if not thousands, of years. The material can undergo a number of recycling operations, producing further plutonium each time. Within the first decade or two there could be tonnes of plutonium derived from Australian uranium that would be well beyond any information available to Australia."

Friends of the Earth has long called for Administrative Arrangements to be made public and we are pleased to read in Mr Carlson's submission: "Given the public interest in this agreement and the concerns about the administrative arrangement, JSCOT may wish to recommend that the administrative arrangement be made public."

It should be noted that tracking is heavily reliant on reports from countries processing AONM − and this opens up the possibility of diversion coupled with dodgy reporting. The IAEA does not distinguish between nuclear materials sourced from one country or another when conducting safeguards inspections/accounting.

The movement of nuclear materials from one country to another provides some checks and balances − if Country X expects delivery of a certain amount of a nuclear material, it will of course be concerned if it receives a lesser amount. But when AONM (and nuclear materials generally) are processed in just one country − which will probably be the case with AONM in India − there is an increased risk of diversion coupled with dodgy reporting.

6.3 REPROCESSING

John Carlson notes in his JSCT submission that provisions in the Australia−India agreement are inadequate and that the Australia-India "has essentially outsourced consent to the US." He argues

that Australia should insist on programmatic consent arrangements such as those that apply with Japan and the EU.

The JSCT should consider stronger options:

- Reverting to the policy established in the Fraser years of requiring consent for reprocessing on a case-by-case basis.
- Banning the reprocessing of AONM altogether given that i) the links between reprocessing and proliferation are strong and undisputed and ii) reprocessing is very much a part of the proliferation problem in India.
- Banning the reprocessing of AONM until such time as India's dual-use reprocessing/breeder program is divorced from its weapons program and placed under IAEA safeguards.

One example of the corrosive effects of the US−India deal (and similar statements could be made regarding the Australia−India Agreement) concerns reprocessing. In 2010 the US and India signed an agreement that will enable India to reprocess US-obligated nuclear material.[80] Thus the US relaxed its policy regarding reprocessing in countries without full-scope safeguards. Squassoni notes:

> *"Until the India deal, the United States did not give programmatic consent, as opposed to case-by-case consent, for reprocessing U.S.-origin fuel unless a country already had an advanced nuclear program, including reprocessing and enrichment plants; did not pose a proliferation risk; was not located in regions of proliferation concern; and had excellent nonproliferation credentials. Until India, the United States had approved the reprocessing of U.S.-origin spent nuclear fuel only in Japan and EURATOM countries France and the United Kingdom."*[81]

6.4 OTHER ISSUES PERTAINING TO SAFEGUARDS AND DIVERSION/PROLIFERATION RISKS

The Agreement should be renegotiated such that that Australia can request (and receive) IAEA safeguards reports insofar as they relate to AONM.

The Agreement should be renegotiated such that provisions for fallback safeguards are at least as strong as provisions Australia requires of other countries, i.e. arrangements that conform with IAEA safeguards principles and procedures and provide equivalent assurance, as opposed to the vague statement in the Agreement regarding "appropriate verification measures".

The Agreement should be renegotiated such that provisions for the return of supplied materials are at least as strong as provisions Australia requires of other countries. Currently the Agreement contains no such provision.

The Agreement should be renegotiated such that dispute settlement provisions are at least as strong as provisions Australia requires of other countries. Currently the Agreement makes no mention of an arbitration process.

6.5 THE US−INDIA DEAL

The US−India deal − concluded in 2008 after three years of negotiation − allows US companies to sell reactors, enriched uranium fuel and potentially other nuclear facilities for India's civil nuclear

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[80] India-US reprocessing agreement signed, 2 August 2010, www.world-nuclear-news.org/NP-India-US_reprocessing_agreement_signed-0208107.html

[81] Sharon Squassoni, July/August 2010, The U.S.-Indian Deal and Its Impact, www.armscontrol.org/act/2010_07-08/squassoni

program.[82] At least, US companies will be able to invest in India's civil nuclear program if and when administrative arrangements between the two countries are concluded.

Under the deal, India will separate its civil nuclear program from its weapons program. It is left to India's discretion to decide which facilities are to be included in its civil program (and therefore subject to safeguards). There will be no attempt to separate civil and military programs with respect to personnel − R. Chidambaram, chief scientific adviser to the India government, said in 2007: "But we are not firewalling between the civil and military programmes in terms of manpower or personnel. That's not on."[83]

A total of 14 reactors would be subject to IAEA safeguards inspections, of which six were already subject to safeguards (four of them operating, two under construction). Other facilities to be safeguarded include three heavy water production plants (leaving at least two beyond the scope of safeguards) and two spent fuel storage facilities that contain spent fuel from the safeguarded reactors.

India's remaining eight power reactors, all its research reactors, the plutonium-fuelled fast breeder reactor program, reprocessing and enrichment facilities remain beyond the scope of safeguards. India reserves the right to classify any future reactors as civilian or military (although supplier states can make sales contingent on the application of IAEA safeguards).

The precedent set by the US−India deal has encouraged some countries to initiate national policy processes and bilateral discussions to enable nuclear trade with India (e.g. USA, France, Russia, Japan, Canada, UK, Argentina, Kazakhstan, and Namibia)[84], while other countries (e.g. Germany) retain their policies and/or legislation prohibiting nuclear trade with non-NPT states. In some cases obstacles are emerging such as a disagreement between Japan and India regarding a proposed clause in a bilateral agreement which would terminate nuclear trade if India conducts further nuclear weapons tests.[85] Likewise, the US and India have not resolved points of contention.

Proponents of the US−India deal promised non-proliferation and disarmament concessions and advantages, but in fact the opposite has occurred. India did commit to nuclear disarmament. India did not commit to sign the CTBT. India has not stopped producing fissile (explosive) material for nuclear weapons nor has it committed to doing so. There is no restraint on India building new, unsafeguarded reactors or other facilities for its weapons program. India did not commit to comprehensive safeguards.

Proponents of the agreement have resorted to dishonest arguments. These include the claim that India's 'moratorium' on nuclear tests is a victory although it was in place before the US−India negotiations and is clearly no substitute for signing and ratifying the CTBT.

Likewise, India's willingness to separate its peaceful and military programs is portrayed as a successful outcome. But that separation is partial and does not constrain India's nuclear weapons program in any way, and is part of a process which legitimises India's weapons program and facilitates its expansion.

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[82] For detail on the US-India deal see the resources posted on the Abolition 2000 US-India Deal Working Group's website, http://cnic.jp/english/topics/proliferation/campaign/usindia.html

[83] www.hindu.com/2007/08/10/stories/2007081056171100.htm

[84] K. S. Jayaraman and Declan Butler, 6 January 2009, Companies racing into India's nuclear market, www.nature.com/news/2009/090106/full/457134b html
World Nuclear Association, 'Nuclear Power in India', www.world-nuclear.org/info/Country-Profiles/Countries-G-N/India/

[85] The Japan Roadblock to Nuclear Cooperation, 28 October 2010, http://online.wsj.com/article/SB10001424052702303362404575579493748766302 html

The US was in a strong bargaining position but won no meaningful concessions from India. It is doubtful whether the US even attempted to secure meaningful concessions. Mian and Ramana point to broader strategic considerations:

> *"Recruiting India may help reduce the immediate costs to the United States of exercising its military, political, and economic power to limit the growth of China as a possible rival. ... India is seen as a major prize, and support for its military buildup and its nuclear complex seems to be the price the Bush administration is willing to pay. This goal is, it seems, to be pursued regardless of how it will spur the spiral of distrust, political tension, and dangerous, costly, and wasteful military preparedness between the United States and China, between China and India, and between India and Pakistan."*[86]

6.6 NUCLEAR SUPPLIERS GROUP

The NSG was formed in the 1970s as a direct result of India's 1974 nuclear weapons test, which used plutonium produced in a Canadian-supplied research reactor and violated India's promise to use the reactor for peaceful purposes only. In September 2008, the NSG agreed to exempt India from the NSG policy banning trade with countries which do not have full-scope safeguards.

The Australian-led International Commission on Nuclear Non-proliferation and Disarmament noted in a 2009 report: "The NSG's credibility has been put most at risk by its decision in September 2008 to exempt India from rules barring nuclear cooperation with states outside the NPT that do not accept international safeguards on all of their nuclear facilities. The United States and India instigated this change, strongly encouraged by France and Russia, which welcomed the opportunity for nuclear commerce with India. Any one of the NSG's 46 member states could have blocked the exemption, because the group operates by consensus. Several wanted to, but none did, due largely to commercial interests in India and political pressure from the United States." [87]

Reflecting widespread disappointment at the failure to secure meaningful commitments from India, even among NSG countries that agreed to exempting India from NSG guidelines, German foreign ministry spokesperson Jens Ploetner said on 8 September 2008: "There were several countries that put critical questions to India, but also the United States, about how this arrangement is compatible with the common goal of nuclear non-proliferation. ... It is not an ideal solution. The negotiations were very difficult and we cannot say that we could not have imagined something better."[88]

Johan Bergenäs from the James Martin Center for Nonproliferation Studies explored the politicking around the NSG decision:[89]

> *"During NSG deliberations on September 4-6 [2008], as well as during a previous meeting in August, a small number of states, including Austria, Ireland, the Netherlands, New Zealand, Norway, and Switzerland, proposed amendments to the Indian exemption. These amendments included termination of nuclear exports to India in the case of a nuclear weapons test, and prohibition of the export of items to India related to uranium enrichment, spent fuel reprocessing, and production of heavy water. ...*

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[86] Zia Mian and M. V. Ramana, January/February 2006, 'Wrong Ends, Means, and Needs: Behind the U.S. Nuclear Deal With India', Arms Control Today, www.armscontrol.org/act/2006_01-02/JANFEB-IndiaFeature

[87] International Commission on Nuclear Non-proliferation and Disarmament, 2009, 'Eliminating Nuclear Threats, A Practical Agenda for Global Policymakers', www.icnnd.org

[88] 9 Sept 2008, 'Germany Grudgingly Accepts Landmark Nuclear Deal with India', www.dw-world.de/dw/article/0,,3629002,00.html

[89] Johan Bergenäs, October 2008, 'White Knight States Deviate from Long Held Nonproliferation Ideals as Nuclear Suppliers Group Approves Waiver', WMD Insights, www.wmdinsights.com/I27/I27_G2_WhiteKnightStates htm

> *"Four NSG countries – Australia, Canada, Japan, and Sweden – ... did not join the six countries that asked for amendments to the exemption. Their inaction and their reasoning for joining the NSG consensus came under close scrutiny and were fiercely criticized by domestic political opposition, foreign and local observers, and nonproliferation and disarmament groups in their respective countries. ... At least for now, these four states' credibility and ability to speak up against proliferation and for disarmament have diminished.*
>
> *"The NSG exemption is admittedly a landmark victory for both Prime Minister Singh and President Bush. Considering the potential damage the exemption and the U.S.-India deal could do to the nonproliferation regime, however, and especially its flagship treaty, it might turn out that in the longer run Washington and New Delhi have achieved – with the active support, tacit agreement, and reluctant approval of other NSG states – a Pyrrhic victory."*

Australia made no effort to attempt to strengthen the deal or to limit the damage to the NPT and the non-proliferation regime more generally. Then foreign minister Stephen Smith said Australia did not "put any reservations or support any changes to the arrangement".[90] Smith cited three broad reasons for the NSG's granting of a waiver to India: India's non-proliferation record, its commitment to disarmament and its "rise as a global power".[91]

Australia also supported the India-specific safeguards agreement through its position on the Board of Governors of the IAEA. There is no evidence that Australia made any attempt to strengthen the safeguards agreement.

6.7 INTERNATIONAL COMMISSION ON NUCLEAR NON-PROLIFERATION AND DISARMAMENT

It was widely and incorrectly reported that the 2009 report of the Australian-led International Commission on Nuclear Non-proliferation and Disarmament[92] had given a 'green light' to uranium sales to India. However the ICNND set down conditions which were not met by the US−India deal and have not been met during negotiations between Australia and India.

The ICNND argued that civil nuclear trade with India, Pakistan and Israel should be allowed "provided they satisfy strong objective criteria demonstrating commitment to disarmament and non-proliferation, and sign up to specific future commitments in this respect."[93] The ICNND report mentions "centrally important" parallel instruments like the CTBT and FMCT that India, Pakistan and Israel could sign and ratify. The report notes that the US−India deal sets a "very unfortunate precedent" in its failure to require India to meet objective criteria such as CTBT and FMCT ratification.

In its 5 July 2010 Vienna Communiqué, the ICNND states: "One unique contribution of the Commission not available to the NPT parties in preparation for the Review Conference was outreach to the non-NPT states (India, Pakistan and Israel), making the case – if their early membership of the NPT itself could not be secured – for their participation in parallel instruments and arrangements which apply equivalent non-proliferation and disarmament obligations (see

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[90] Johan Bergenäs, October 2008, 'White Knight States Deviate from Long Held Nonproliferation Ideals as Nuclear Suppliers Group Approves Waiver', WMD Insights, www.wmdinsights.com/I27/I27_G2_WhiteKnightStates htm
[91] 11 Sept 2008, 'India got the waiver because of its rise as global power', http://timesofindia.indiatimes.com/India_got_the_waiver_because_of_its_rise_as_global_power/articleshow/3472841.cms
[92] www.icnnd.org
[93] International Commission on Nuclear Non-proliferation and Disarmament, 2009, 'Eliminating Nuclear Threats, A Practical Agenda for Global Policymakers', www.icnnd.org

Commission Recommendations 17-19). But the Commission reaffirms its concerns about the terms of the exemption approved by the Nuclear Suppliers Group for India's nuclear programs, which did not require a strong new commitment to disarmament and non-proliferation objectives and measures. Its view remains that any future supply to non-NPT countries be on condition at least that the receiving state not conduct any nuclear test and implement a moratorium on the production of fissile material for weapon purposes pending the entry into force of a fissile material production ban."[94]

Australia has not secured any of the commitments discussed by the ICNND.

6.8 INDIA'S NON-COMMITMENTS

An August 1, 2007 media release from then foreign minister Alexander Downer stated: "The US−India initiative includes commitments by India to continue its nuclear testing moratorium, work on conclusion of a Fissile Material Cut-off Treaty, and adhere to Missile Technology Control Regime and Nuclear Suppliers Group standards."

In truth, India committed to nothing − certainly nothing of substance. A July 2007 statement by the Indian Embassy states that the US−India agreement "will specifically provide that India's strategic nuclear programme ... will remain unhindered and unaffected."[95]

The Indian Embassy noted in 2005 that under the auspices of the US−India deal it was merely reiterating previous, non-binding 'commitments': "A number of existing policies were also reiterated by India, among them a unilateral moratorium on nuclear testing, working towards conclusion of a multilateral Fissile Material Cut-off Treaty, non-transfer of enrichment and reprocessing technologies, securing nuclear materials and technology through export control, and harmonisation with MTCR and NSG guidelines."[96]

Mr Downer's statement regarding NSG standards was disingenuous given that the US−India deal was itself a violation of the NSG principle of not supporting nuclear programs in non-NPT states (or more precisely, its requirement for full-scope safeguards to apply).

India's 'moratorium' on nuclear weapons testing counts for nothing given that it refuses to sign or ratify the CTBT. Mr Downer himself argued at a 2005 CTBT conference that a voluntary moratorium on testing was no substitute for CTBT ratification.[97]

Indian national security adviser M.K. Narayan said that the US−India deal did not cover the question of nuclear tests. "This deal deals primarily with the civil nuclear cooperation. There is no reference here to detonation or to any test. So, what happens in the event of a test, we will come to that position later on."[98] Likewise the Indian government's chief scientific adviser states that "there is nothing in the agreement which prevents us from testing, if the government decides to test for whatever reason."[99]

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[94] www.icnnd.org/Pages/100705_vienna_communique.aspx
[95] Indian Embassy, 27 July 2007, 'Fact Sheet on the India US Civil Nuclear Energy Co-operation: Conclusion of the '123' Agreement', www.indianembassy.org/newsite/press_release/2007/July/10.asp
[96] Indian Embassy, 29 July 2005, "Backgrounder on India-U.S. Civilian Nuclear Energy Cooperation", www.indianembassy.org/press_release/2005/July/32.htm
[97] Andy Butfoy, 20 Aug 2007, www.theage.com.au/news/opinion/australia-is-backing-a-nuclear-rogue/2007/08/19/1187462081031 html
[98] Indian Embassy, 27 July 2007, 'Fact Sheet on the India US Civil Nuclear energy Co-operation: Conclusion of the '123' Agreement', www.indianembassy.org/newsite/press_release/2007/July/10.asp
[99] Quoted in *The Hindu*, 10 Aug 2007, www.hindu.com/2007/08/10/stories/2007081056171100.htm

Moreover, the US−India agreement envisages joint efforts to ensure ongoing fuel supply for, and operation of, India's reactors even if US fuel supplies are terminated (e.g. as a response to India testing nuclear weapons). These include the establishment of a fuel reserve (or 'bank'), and joint efforts to convene a group of "friendly supplier countries" including Russia, France and the UK to pursue measures to restore fuel supply to India. The Arms Control Association notes that: "The fuel supply assurances that the United States is committed to giving India are not found in any other U.S. peaceful nuclear cooperation agreement, including those with parties to the NPT. In other words, with these fuel assurances the United States is giving preferential treatment to a non-NPT party that has assumed none of the obligations and burdens of the NPT."[100]

In relation to fissile material production, Indian officials noted in July 2005 that: "There is no commitment at all to cease production of fissile material ahead of the conclusion of such a multilateral [FMCT] treaty."[101] India's commitment to an FMCT has not been seriously tested because the negotiations have made little progress − and of course it is a commitment which sits uneasily with India's ongoing production of fissile material.

6.9 PREFERENTIAL TREATMENT FOR INDIA *VIS A VIS* THE DECLARED WEAPONS STATES

India claims that it will live up to the responsibilities of other nuclear weapons states. But all five of the 'declared' weapons states − the US, China, the UK, Russia, and France − have signed the CTBT and the UK, Russia and France have ratified it. At least four and possibly the fifth (China) have stopped producing fissile material for weapons. By contrast, India has not signed or ratified the CTBT and continues to produce fissile material.

Far from being lumbered with commitments which will curb India's nuclear weapons program, India is not even bound by the NPT disarmament obligations which apply to the five 'declared' nuclear weapons states. Those obligations are to "[declare] their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament."

Rory Medcalf from the Lowy Institute argues that: "The world can no longer afford to leave [India] out of the nonproliferation and nuclear security tent ..."[102] However the argument collapses given that India has made no disarmament concessions and is not bound by the NPT disarmament obligations.

Paul Barratt, former Secretary to the Australian Department of Defence, states:

> *"The narrative runs that the policy discriminates against India because we are prepared to export uranium to China, a nuclear weapon state, but not to India for peaceful use. This is arrant nonsense. ... India is not a party to the NPT, has never been, has developed a nuclear weapons capability as a non-member of the Treaty, and accordingly, is in an entirely different position from China* vis a vis *Australian uranium export policy. ... India is now in the privileged position of being the only known country with nuclear weapons which is not a party to the NPT but is permitted to carry on nuclear commerce with the rest of the world. The discrimination is in India's favour, not against it."*[103]

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[100] Arms Control Association, 2 Aug 2007, 'U.S.-Indian Nuclear Agreement: A Bad Deal Gets Worse', www.armscontrol.org/pressroom/2007/20070803_IndiaUS.asp

[101] Indian Embassy, 29 July 2005, "Backgrounder on India-U.S. Civilian Nuclear Energy Cooperation", www.indianembassy.org/press_release/2005/July/32.htm

[102] Rory Medcalf, 15 April 2010, The Wall Street Journal, www.lowyinstitute.org/Publication.asp?pid=1277
See also 'The Lowy Institute's disgraceful propaganda campaign in relation to uranium sales to India', www.foe.org.au/anti-nuclear/issues/oz/u/cc/rory-medcalf-lowy-institute

[103] www.abc net.au/unleashed/3684518.html

John Carlson notes in his JSCT submission:

> *"India has said it is prepared to assume the same responsibilities and practices as other leading nuclear countries, such as the US − India should live up to this commitment. India's nuclear circumstances – an expanding nuclear weapon program, the links between military and civilian activities, parallel safeguarded and unsafeguarded civilian programs – present particular safeguards challenges. In these circumstances, applying the same safeguards conditions to India as apply to all other bilateral partners is a major demonstration of trust and confidence. To propose lesser conditions cannot be justified."*

6.10 INDIA'S TRACK RECORD

Then Prime Minister John Howard said in 2006 that India had a "very good record in relation to non-proliferation". Similar words almost always accompany arguments in support of civil nuclear trade with India. But India is a non-NPT nuclear weapons state, refuses to sign and ratify the CTBT, violated its pledge to use the Canadian-supplied CIRUS research reactor for peaceful purposes only (and continued to violate that pledge until the reactor was shut down in 2010), tested nuclear weapons in 1974 and 1998, has a history of illicit nuclear procurement and inadequate nuclear export controls, and continues to produce fissile material for weapons and to expand its nuclear weapons and missile capabilities more generally.

The 1974 disaster warrants mention given the possibility of history repeating itself. Nuclear exporters were falling over themselves to get a toe-hold in the Indian nuclear sector, enticed by predictions of a large and rapid expansion of nuclear power. Those predictions came to nothing (current nuclear power capacity is 5.3 GWe). But India did gain expertise, equipment and materials which facilitated its weapons program, culminating in its use of the CIRUS reactor to produce plutonium for India's 1974 'peaceful' nuclear explosion.

Paul Leventhal and Victor Gilinsky wrote in the Washington Post in 1998[104]:

> *"[I]n the history of U.S.-India relations, nothing stands out so much as India's constancy in pursuing nuclear bomb-making and America's nearsightedness about Indian intentions. India fought to weaken the charter of the new International Atomic Energy Agency in the 1950s. It was duplicitous in carrying out Atoms for Peace agreements in the 1960s. It undermined the Nuclear Non-Proliferation Treaty with its "peaceful" bomb of 1974. Despite this history, each new generation of American policymakers thinks that by being a little more accommodating it will gain Indian restraint and acceptance of nuclear controls. The Indians (they are not alone in this) have for a long time played on that characteristically American self-deception that stems from a mix of idealism and commercial greed. It is not surprising that the Indians expect that game to continue."*

Ron Walker notes that India is "contemptuous" of multilateral commitments on non-proliferation and nuclear disarmament.[105]

6.11 INDIA'S NUCLEAR EXPORTS − AN IMPECCABLE NON-PROLIFERATION RECORD?

Indian Prime Minister Manmohan Singh said in March 2006 that India has "an impeccable record of not contributing to any unauthorised proliferation of sensitive nuclear technologies". Likewise, Alexander Downer said in a 26 July 2007 media conference that "India has no record of having

[104] Quoted in www nci.org/06nci/04/CIRUS%20Reactors%20Role%20in%20a%20US-India%20Nuclear htm
[105] www.lowyinterpreter.org/post/2011/11/18/Uranium-Were-selling-out-our-principles.aspx

exported nuclear weapons technology to anybody." Likewise, Greg Sheridan asserted in *The Australian* on July 26 2007 that "India has an impeccable record of never having proliferated nuclear technology to anybody else". Neville Roach from the Australia India Business Council asserts that India has an "impeccable non-proliferation record".[106] No less enthusiastic is the World Nuclear Association: "A clean waiver to the trade embargo was agreed in September 2008 [by the NSG] in recognition of the country's impeccable non-proliferation credentials. India has always been scrupulous in ensuring that its weapons material and technology are guarded against commercial or illicit export to other countries."[107]

These claims are false − albeit the case that Pakistan clearly has a worse record thanks largely to the A.Q. Khan network.

A US Congressional Research Service noted that in 2004 the US imposed sanctions on two Indian scientists for nuclear-related transfers to Iran.[108] The report also noted that India has an illicit procurement system for its own nuclear weapons program.

The Arms Control Association notes: "The George W. Bush administration has sanctioned several Indian entities for transferring technologies and know-how to Iraq and Iran that could contribute to chemical or biological weapons programs. Independent analysts also allege that India's procurement system for its own nuclear programs could leak or reveal nuclear know-how to other states or non-state actors."[109]

A 2006 report by the Institute for Science and International Security (ISIS) details "a well-developed, active, and secret Indian program to outfit its uranium enrichment program and circumvent other countries' export control efforts" and also found that "Indian procurement methods for its nuclear program leak sensitive nuclear technology".[110] The report notes that to prepare tenders for the supply of equipment for India's uranium enrichment program, interested parties could obtain tender documents listing sensitive technical specifications of uranium centrifuge equipment.

The ISIS report notes that India's nuclear control system is poorly implemented, partly because the relevant officials are inexperienced; that many Indian companies are unaware of export control laws; and that government outreach programs are in their infancy. It found that ensuring that exports are legal and do not contribute to nuclear weapons proliferation will remain a major challenge for many years.

The ISIS report comments on the implications of the US−India deal: "Under the US−India agreement, India is expected to boost imports of a wide range of dual-use and high-tech items from supplier states including the United States. India needs to take additional steps to ensure that imported dual-use items are not retransferred or reverse-engineered and sold to states hostile to the United States for the purpose of making nuclear weapons."

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[106] www.theaustralian.com.au/news/opinion/rudd-needs-to-make-a-deal-with-india/story-e6frg6zo-1225928554544
[107] World Nuclear Association, October 2010, Nuclear Power in India, www.world-nuclear.org/info/Country-Profiles/Countries-G-N/India/
[108] Sharon Squassoni, 26 June 2006, 'U.S. Nuclear Cooperation with India: Issues for Congress', Congressional Research Service Report Number: RL33016, http://digital.library.unt.edu/govdocs/crs/permalink/meta-crs-9399
[109] www.armscontrol.org/factsheets/indiaprofile
[110] David Albright and Susan Basu, 10 March 2006, 'India's Gas Centrifuge Program: Stopping Illicit Procurement and the Leakage of Technical Centrifuge Know-How', Institute for Science and International Security, www.isis-online.org/publications/southasia/indianprocurement.pdf

In another 2006 ISIS report, David Albright and Susan Basu detail three areas of concern[111]:

> *"**Illicit Procurement.** Indian nuclear entities and trading companies have procured nuclear dual-use equipment and material overseas without specifying that the end-user is an unsafeguarded uranium enrichment plant. In so doing, India has conducted illicit procurement for its nuclear programs. ...*
> ***Centrifuge Know-How Leakage.** India's procurement system for its gas centrifuge program leaks sensitive gas centrifuge information through its bidding or "tendering" process. The United States needs to ensure that India's classification guidelines and practices do not increase the chance of nuclear proliferation, endangering US, Indian, and others' national security.*
> ***Poorly Implemented National Export Control System.** Indian export controls are poorly implemented and the possibility of onward proliferation, such as where imported items are re-exported, remains a serious concern. Proliferant states are known to target Indian industries. If the US/India deal is approved by Congress, proliferant states will find India more attractive, because India's imports of nuclear dual use items will dramatically increase. ..."*

John Carlson notes in his JSCT submission: "In developing its unsafeguarded uranium enrichment program, India is believed to have sourced restricted designs, components and materials from the black market (including ironically Pakistan's AQ Khan network), thereby supporting the operations of suppliers illicitly supplying nuclear weapons programs in other countries."

6.12 LEGITIMISING INDIA'S NUCLEAR WEAPONS PROGRAM

A case could be argued for opening up civil nuclear trade with nuclear-armed India if meaningful non-proliferation and disarmament agreements were part of the deal. These might include:

- An immediate, verified cessation of the production of fissile material for weapons and agreement that nuclear trade would cease immediately if India resumed the production of fissile material for weapons.
- India ratifying the CTBT and agreement that nuclear/uranium trade would cease immediately if India resumed nuclear weapons testing.

However, no such agreements were struck during US−India negotiations. Civil nuclear trade with India, in the absence of meaningful disarmament commitments or concessions, merely legitimises and entrenches India's nuclear weapons program. Australian uranium sales would provide further legitimacy.

Some argue that nuclear disarmament is an unrealistic expectation of India. However, South Africa gave up its nuclear weapons. Three ex-Soviet states – Belarus, Ukraine, and Kazakhstan – gave up their nuclear weapons after the collapse of the Soviet Union. There are other relevant historical precedents, such as the agreement between Argentina and Brazil to abandon their pursuit of nuclear weapons in the late 1980s. And considerable progress has been made with respect to the eradication of other weapons of mass destruction, namely chemical and biological weapons.

An alternative course of action would be to aim to curb the nuclear weapons programs of India and Pakistan while working towards a longer-term goal of disarmament. The US−India deal − and now the Australia-India Agreement − undermines those short-term and longer-term goals.

6.13 LEGITIMISING NUCLEAR WEAPONS PROGRAMS: REGIONAL IMPLICATIONS

[111] David Albright and Susan Basu, 5 April 2006, 'Neither a Determined Proliferator Nor a Responsible Nuclear State: India's Record Needs Scrutiny', http://isis-online.org/uploads/isis-reports/documents/indiacritique.pdf

Proponents of civil nuclear trade with India held out the promise of a cessation of fissile material production and progress towards a Fissile Material Cut-Off Treaty (FMCT) as a result of the US−India deal. Instead, both India and Pakistan continue to produce fissile material for weapons (possibly at an increased rate), both have increased their capacity to produce fissile material, and progress on a FMCT has been frustrated as a direct result of the US−India deal.

In April 2006, Pakistan's National Command Authority (NCA), chaired by President Pervez Musharraf, declared that: "In view of the fact the [US−India] agreement would enable India to produce a significant quantity of fissile material and nuclear weapons from unsafeguarded nuclear reactors, the NCA expressed firm resolve that our credible minimum deterrence requirements will be met."[112] In the same month, Pakistan's Prime Minister, Shaukat Aziz warned that "a selective and discriminatory approach will have serious implications for the security environment in South Asia."[113]

Former U.N. Under-Secretary-General for Disarmament Affairs, Jayantha Dhanapala, said of the US−India deal in July 2007: "It has the dangerous potential of triggering a nuclear arms race among India, Pakistan and China, with disastrous consequences for Asian peace and stability and Asia's emerging economic boom."[114]

These fears are being realised. In recent years both India and Pakistan have been expanding their nuclear weapon capabilities by increasing their capacity to produce fissile materials (and continuing and possibly increasing the rate of fissile material production) and through their missile programs.[115] The two countries are no closer to a legally-binding ban on nuclear weapons tests, and support for a FMCT is "weak at best" (and weaker than it was prior to the US−India deal).[116]

Beijing has called on the Nuclear Suppliers Group to apply any exemptions to normal nuclear export rules to India and Pakistan equally – a proposal rejected by the US. China's support for Pakistan's nuclear program has been extended in the wake of the US−India deal.

Pakistan has been playing a blocking role in the Conference on Disarmament, frustrating progress on an FMCT. Zamir Akram, Pakistan's Ambassador to the Conference on Disarmament, said in early 2010 that the US−India deal "shall increase the existing asymmetry in fissile materials stockpiles between Pakistan and our neighbor, thereby accentuating our security concerns for maintaining a credible deterrence capability."[117]

In October 2010 Ambassador Akram said: "Over the past few years, some powerful countries, in pursuit of their commercial interests as well as dubious notions of balance of power, have embarked

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[112] Shakil Sheikh, 2006, 'Pakistan Vows to Maintain Credible N-deterrence', The News, April 13.
[113] Aziz Pleads for Pak-US N-Deal, 6 April 2006, Daily Times.
[114] Thalif Deen, 31 July 2007, 'US-India Nuke Deal May Spark Asian Arms Race', http://ipsnews net/news.asp?idnews=38744
[115] http://thebulletin.org/2011/julyaugust/pakistan%E2%80%99s-nuclear-forces-2011
R. Jeffrey Smith and Joby Warrick, 28 May 2009, 'Nuclear Aims By Pakistan, India Prompt U.S. Concern', www.washingtonpost.com/wp-dyn/content/article/2009/05/27/AR2009052703706 html.
Sharon Squassoni, July/August 2010, 'The U.S.-Indian Deal and Its Impact', www.armscontrol.org/act/2010_07-08/squassoni
[116] Daryl Kimball, July/August 2009, Toward a Nuclear Freeze in South Asia, www.armscontrol.org/act/2009_07-08/focus. On the FMCT see http://gsn.nti.org/gsn/nw_20090821_7549.php
[117] Mark Hibbs, Shahid-ur-Rehman, and Randy Woods, 25 February 2010, 'Pakistan says US-India deal forces it to keep making weapons material', Nucleonics Week. Pakistan's statements at the Conference on Disarmament are summarised in a 18 February 2010 UN Office paper: http://unog.ch/80256EDD006B9C2E/%28httpNewsByYear_en%29/E03CF8E5E9B5CAB4C12576CE0048A1CB?OpenDocument

upon an unfettered and discriminatory nuclear cooperation arrangement in gross violation of their international commitments. ... This has accentuated our security concerns as such nuclear cooperation shall further widen the asymmetry in stockpiles in our region."[118]

Squassoni discusses Pakistan's reaction to the US−India deal:[119]

> *"Although Bush administration officials told Congress they would encourage India and Pakistan to exercise restraint in fissile material production, the deal seems to have accelerated Pakistan's unsafeguarded uranium- and plutonium-production capability. Pakistan has been expanding its capabilities to produce plutonium in unsafeguarded production reactors (Khushab site) and reprocessing plants (PINSTECH site) and to process uranium (at the Dera Ghazi Khan site). Finally, Pakistan's perceptions of and concerns about the Indian civil nuclear deal also appear to have further degraded Islamabad's willingness to engage in key nonproliferation and disarmament talks. Responding to a press question in 2009 about the prospects that Pakistan would follow suit if India joined the Comprehensive Test Ban Treaty (CTBT), the Ministry of Foreign Affairs spokesman noted that "[o]bviously new realities have to be considered. I can tell you that at this point in time there is no consideration to sign the CTBT." Pakistan has also hardened its opposition to the start of fissile material production cutoff talks at the Conference on Disarmament (CD) in Geneva. For more than a decade, Pakistan has complained that that a cutoff treaty must not lock in disparities in fissile material stocks. The India deal has only underscored that fear."*

In time, Australia may become an equal-opportunity proliferator, supplying WMD feedstock in the form of uranium to both India and Pakistan – just as Australia sells uranium to both Taiwan (via the US) and China. Then Prime Minister Howard argued in September 2006 that it would be "anomalous" to sell uranium to China but not India. His argument was specious since China is a NPT signatory. But it would indeed be anomolous to sell uranium to India but not Pakistan since both are non-NPT states. It might be argued that India is a democracy whereas Pakistan is not; but Australia has already crossed that threshold by approving uranium sales to China.

In a worst-case scenario, Indo-Pakistani warfare involving the detonation of 100 15-kiloton weapons would kill about 20 million people in the short term. It could also cause catastrophic climate change with urban firestorms lofting five million tonnes of black smoke above cloud level, engulfing the entire planet within 10 days.[120]

6.14 LEGITIMISING NUCLEAR WEAPONS PROGRAMS: GLOBAL IMPLICATIONS

Why engage in nuclear trade with India but not with other non-NPT weapons states − Pakistan, Israel, and North Korea? On March 6, 2006, Alexander Downer, then an opponent of uranium sales to India, said on ABC television's Lateline program: "And the problem is, if you start to make an exception for India then it raises questions, of course, about Pakistan and then it raises questions about Israel. They're the three non-signatories. ... You'd have to be pretty persuasive in not extending the same privilege to Pakistan and Israel."

Likewise, Kevin Rudd said in August 2007: "I believe we've got no alternative but to do that [reverse the Howard government's decision to approve uranium sales to India]. I realise that's a very

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[118] 13 Oct 2010, 'Treaty banning only future production of fissile material 'unacceptable': Pakistan', www.defence.pk/forums/wmd-missiles/76497-pakistan-rejects-fmct-again.html
[119] Sharon Squassoni, July/August 2010, 'The U.S.-Indian Deal and Its Impact', www.armscontrol.org/act/2010_07-08/squassoni
[120] www.nucleardarkness.org/warconsequences/catastrophicclimaticconsequences/

difficult thing to do, but we have a principle when it comes to this country's foreign policy engagement with the world which is this: We respect the Nuclear Non-Proliferation Treaty and the [International Atomic Energy Agency] because we've got to prevent nuclear weapons proliferation in our own region, in our own neighbourhood and our own backyard. No one in Australia wants a nuclear arms race aided by us in the Indian sub-continent or between India and China because we've failed to properly ensure the upholding of the NPT and the IAEA safeguards regime under it."[121]

Now that the Coalition and the ALP have abandoned their previous principled policy of banning uranium sales to non-NPT states, they are left with the drug-dealer's defence, i.e., some other countries have abandoned the principle that nuclear trade should be restricted to NPT signatories so Australia might as well follow suit. Yet, as Ron Walker, former Chair of the IAEA Board of Governors, argued: "India is a democracy and yes we want to be in their good books, but that is no reason to drop our principles and our interests. To make an exception for them would be crass cronyism. If you make exceptions to your rules for your mates, you weaken your ability to apply them to everyone else. How could we be harder on Japan and South Korea if they acquired nuclear weapons? Could we say Israel is less of a mate than India?"[122]

A Lowy Institute paper flags the prospect of Russia or Namibia supplying Iran.[123] Russia's help with the construction of the Bushehr nuclear power plant in Iran − opposed by the US − was made all the easier by the weakening of non-proliferation and disarmament norms established by the US−India deal. In November 2014, Russia announced plans to build two more power reactors in Iran, and possibly six more on top of that.

There is a risk that civil nuclear trade with India, and the ongoing erosion of non-proliferation norms, will encourage other countries to pull out of the NPT and develop arsenals of nuclear weapons – doing so with the expectation that civil nuclear trade would continue." As former Australian diplomat Professor Richard Broinowski wrote in the *Sydney Morning Herald* in 2006: "The sale of Australian uranium to India would not just weaken our non-proliferation credentials – it would also signal to some of our major uranium customers, such as Japan and South Korea, that we do not take too seriously their own adherence to the NPT. They may as a result walk away from the Treaty and develop nuclear weapons – against North Korea, China, or perhaps Russia – without necessarily fearing a cut-off of Australian supplies."[124]

John Carlson states in his JSCT submission: "Critics are concerned that reversing the comprehensive safeguards requirement for India has damaged the NPT, by giving countries the message that they can withdraw from the Treaty and still receive all the benefits under it. The case of a country that never joined, however, is totally different to a country that is a party and seeks to withdraw. Any withdrawal is automatically referred to the Security Council and the country concerned could expect to face sanctions."

Yes, but sanctions might be avoided, or they might be temporary and trivial. India is not being sanctioned for expanding its nuclear weapons program − it is being rewarded − and it plausible that Japan or South Korea might escape serious sanctions or serious efforts to force them to abandon nuclear weapons programs. None of the declared weapons states are sanctioned though all of them flout their NPT disarmament obligations.

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[121] ABC Lateline, 16 Aug 2007, www.abc.net.au/lateline/content/2007/s2007343 htm
[122] www.lowyinterpreter.org/post/2011/11/18/Uranium-Were-selling-out-our-principles.aspx
[123] Ron Walker, 2007, Uranium for India: Avoiding the Pitfalls, www.lowyinstitute.org/Publication.asp?pid=588
[124] 'Selling uranium to India will do great damage, with little gain to Australia', www.smh.com.au/business/selling-uranium-to-india-will-do-great-damage-with-little-gain-to-australia-20101031-178uk html

Rory Medcalf from the Lowy Institute argues: "Neither the US−India deal nor Australian uranium sales will determine whether third countries opt for nuclear arms. Each state that holds or might want such weapons has its own reasons based on fear, power and prestige."[125] Medcalf misses the point. For a number of countries, civil nuclear trade is an incentive to remain in the NPT as a non-weapons state, and conversely the threat of cessation of nuclear trade is a disincentive to pulling out of the NPT and building weapons.

Israel has also sought exemptions from NSG guidelines based on the precedent of the US−India deal and may press the matter in coming years.[126]

Squassoni discusses some broader impacts of the US−India deal:[127]

> *"During the 2010 NPT Review Conference, India's special status was a significant irritant. The 118 members of the Nonaligned Movement (NAM) charged that the U.S.-Indian nuclear deal had given an NPT nonparty more benefits than NPT parties. This had two effects: NAM countries sought to restrict benefits to India by including language on the need for full-scope safeguards for nuclear supply, and they sought to widen their own possibilities for supply by including language on fuel cycle rights. ...*
>
> *"Creating an "exceptional" nonparty to the NPT has increased pressure across the nonproliferation regime. States have pushed the boundary between legally binding and voluntary commitments. NSG consensus has suffered dramatically, as China and Russia have exploited the political disarray for their own national benefit. Efforts to restrict enrichment and reprocessing may suffer, as some states insist on their "legal" rights. At the 2010 NPT Review Conference in May, the language in the action plan referring to states' fuel cycle decisions called on treaty parties to "[r]espect each country's choices and decisions in the field of peaceful uses of nuclear energy without jeopardizing its policies or international cooperation agreements and arrangements for peaceful uses of nuclear energy and its fuel cycle choices," a swipe at efforts to get countries to forswear the acquisition of sensitive technology such as uranium enrichment and spent fuel reprocessing."*

The Economist in June 2010 raised other problems arising from the US−India deal:[128]

> *"America argued that India had a spotless non-proliferation record (it doesn't) and that bringing it into the non-proliferation "mainstream" could only bolster global anti-proliferation efforts (it didn't). The deal incensed not just China and Pakistan but many others, inside and outside the NSG. An immediate casualty was the effort to get all members of the Nuclear Non-Proliferation Treaty (NPT), who have already promised not to seek the bomb, to sign up to an additional protocol on toughened safeguards. Many have, but on hearing of the America-India deal Brazil's president is reputed to have flatly ruled that out. And where Brazil has put its foot down, others have also hesitated. ...*
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> *"The deal also affects efforts to contain Iran. Western diplomats seeking support for UN sanctions on the Islamic republic find themselves receiving a wigging over the double standards used with India. Iranian officials used to argue that they just wanted to be treated*

[125] Rory Medcalf, 6 Aug 2007, Welcoming India to the nuclear club, www.theage.com.au/news/opinion/welcoming-india-to-the-nuclear-club/2007/08/05/1186252539465 html
[126] Sharon Squassoni, July/August 2010, The U.S.-Indian Deal and Its Impact, www.armscontrol.org/act/2010_07-08/squassoni
[127] Sharon Squassoni, July/August 2010, The U.S.-Indian Deal and Its Impact, www.armscontrol.org/act/2010_07-08/squassoni
[128] The Economist, 24 June 2010, 'The power of nightmares', www.economist.com/node/16426072

like Japan. It has free access to advanced nuclear technology. But unlike Iran, Japan does not repeatedly violate nuclear safeguards. Some Iranian officials now muse boldly that the big powers will eventually come to do deals with them, just as they did with India. Iran's latest raspberry in response to a fourth round of UN sanctions was to ban two nuclear inspectors from the International Atomic Energy Agency, the UN's nuclear guardian. Iran dislikes its reports on the regime's dubious nuclear activities."