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Safeguarding the use of Australian Uranium

Introduction

5.1 Australian Government policy limits supply of Australian Obligated Nuclear Material (AONM)[1] to countries with which Australia has bilateral safeguards agreements and detailed Administrative Arrangements in place.[2] The Agreements under review include safeguards to allow for the transfer of AONM and the cooperation in the peaceful use of nuclear technology.

5.2 Chapter 5 provides discussion on whether the safeguards included in the Agreements are adequate to ensure the non-military[3] use of AONM and the peaceful use of nuclear technology. Other issues arising during the course of the inquiry, relating to the International Atomic Energy Agency's nuclear safeguards system are also included.

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1 AONM is defined in the Nuclear Material Transfer Agreement as Australian uranium and nuclear material derived from it. E.g. Plutonium.

2 Regulation Impact Statement (RIS), p. 1.

3 Military use, which is not permitted, includes: any direct military application of nuclear energy such as nuclear weapons, military nuclear reactors, production of tritium for military purposes, military nuclear propulsion and depleted uranium munitions. RIS, p. 2.

The IAEA's nuclear safeguards system

The International Atomic Energy Agency

5.3 The International Atomic Energy Agency (IAEA) is a United Nations organisation created in 1957. The IAEA is an independent, intergovernmental science and technology-based organisation tasked with promoting safe, secure and peaceful global cooperation in nuclear technologies. The IAEA also helps its member states in planning and using nuclear science and technology for peaceful purposes including the generation of electricity. In addition, the IAEA is charged with developing nuclear safety standards and verifying through its inspection system that member States comply with their commitments under the *Treaty on the Non-Proliferation of Nuclear Weapons* (NPT) and other non-proliferation agreements. These agreements provide for the peaceful use of nuclear material and facilities.[4]

Treaty on the Non-Proliferation of Nuclear Weapons

5.4 The system of international nuclear safeguards is created by the NPT. In addition, there are two other treaty level agreements which also provide for the non-proliferation of nuclear weapons and technology, the *Treaty for the Prohibition of Nuclear Weapons in South America* (the Treaty of Tlatelolco) and the *South Pacific Nuclear Free Zone Treaty (*the Treaty of Rarotonga*).*[5]

5.5 The 1968 NPT, was a response to the growing international concern about the use of nuclear weapons and technology. NPT entered into force in March 1970 with over 150 member countries. NPT is premised on preventing the spread of nuclear weapons and technology and promotes the peaceful, non-military use of all nuclear material and technology.[6] NPT includes:

- Article II which provides that each non-nuclear weapon state that becomes a Party to the NPT agrees not to acquire nuclear weapons or other nuclear explosive device.

4 IAEA, viewed 26 October 2006, <www.iaea.org>; Mr John Carlson, *Transcript of Evidence*, 4 September 2006, p. 20.

5 IAEA, *Origin of comprehensive safeguards agreements*, viewed 6 November 2006, <www.iaea.org>.

6 IAEA, *International Conventions and Agreements*, viewed 6 November 2006, <www.iaea.org>.

- Article III which provides that each non-nuclear weapons state (party to the NPT) conclude a comprehensive safeguards agreement with the IAEA for peaceful nuclear activities for the present and into the future.
- Article IV which provides that Parties may participate in the exchange of equipment, materials, scientific and technological information for peaceful uses of nuclear energy.
- Article VI which provides for Parties to pursue negotiations in 'good faith' towards nuclear disarmament.[7]

5.6 NPT limits the number of declared nuclear weapon states to five and currently includes all five of the declared nuclear weapon states of China,[8] France, the Russian Federation, the United Kingdom of Great Britain and the United States of America.[9] Although declared nuclear-weapon states are not obliged to conclude safeguards agreements with the IAEA, they have agreed that IAEA safeguards may be applied to all or part of their civil nuclear activities. Nuclear-weapon states have agreed to this to confirm 'that they will not derive any commercial advantage by not making their civil facilities subject to international inspection.'[10]

5.7 As well as the NPT, the Treaty of Tlatelolco and the Treaty of Rarotonga also require member countries to conclude comprehensive safeguards agreements with the IAEA and that any nuclear material held or subsequently acquired be declared and submitted to safeguards.[11]

Verification measures included in the IAEA's nuclear safeguards system

5.8 Verification measures are designed to assess a member State's declared nuclear material and nuclear material related activities. Verification includes: on site inspections,[12] visits and ongoing

7 IAEA, *Origin of comprehensive safeguards agreements*, viewed 6 November 2006, <www.iaea.org>.

8 China acceded to the NPT on 9 March 1992. IAEA, *Nuclear Non-Proliferation: Chronology of Key Events*, viewed 6 November 2006, <www.iaea.org>.

9 Fisher, David, *History of the IAEA: The First Forty Years*, viewed 6 November 2006, <www.iaea.org>.

10 IAEA, *Origin of comprehensive safeguards agreements*, viewed 6 November 2006, <www.iaea.org>.

11 IAEA, *Origin of comprehensive safeguards agreements*, viewed 6 November 2006, <www.iaea.org>.

12 These include: ad hoc, routine, special and safeguards inspections and visits.

monitoring and evaluation. The IAEA uses two types of verification measures:

- One verifies State reports of declared nuclear material and activities. These measures (as included under NPT) are based on nuclear material accountancy in addition to containment, surveillance techniques i.e. tamper proof seals, and IAEA installed cameras at monitored facilities.
- The other measure is designed to strengthen the IAEA's inspection capability (as provided by the Additional Protocol to the Safeguards Agreement). The measure allows the IAEA to 'verify the non-diversion of declared nuclear material and provides assurances of the absence of undeclared nuclear material and activities within a State.'[13]

Additional Protocol to Safeguards Agreements

5.9 The Additional Protocol to Safeguards Agreements is a legal document that came into existence in May 1997 and allows the IAEA to implement measures to strengthen its existing nuclear safeguards system. The Additional Protocol was conceived in response to the discovery of Iraq's clandestine nuclear weapons program, in addition to other developments in the early 1990s and focuses on a verification system for undeclared nuclear material and activities.[14]

5.10 Under the Nuclear Safeguards System, routine inspections were limited to specific 'strategic points' in declared facilities. With the Additional Protocols, a State must provide access to all places where there is, or may be activity related to the nuclear fuel cycle. Where access is not possible, the State must immediately make reasonable effort to satisfy IAEA requirements through other means.

5.11 Specifically, the Additional Protocol provides for:

- Information about, and access to, all aspects of a state's nuclear fuel cycle, from uranium mines to nuclear waste and any locations where nuclear material intended for non-nuclear uses is present
- Inspections at short notice to all buildings on a nuclear site

13 IAEA, IAEA Safeguards Overview: Comprehensive Safeguards Agreements and Additional Protocols, viewed 6 November 2006, <www.iaea.org>.

14 IAEA, Non-Proliferation of Nuclear Weapons and Nuclear Security: IAEA Safeguards Agreements and Additional Protocols, May 2005, p. 6, viewed 6 November 2006, <www.iaea.org>.

- Information on the manufacture and export of sensitive nuclear technologies and inspection mechanisms for manufacturing and import locations
- Access to other nuclear-related locations
- Collection of environmental samples outside of declared locations as required.[15]

5.12 The Additional Protocol also provides for improved administrative procedures including streamlined procedures for designating inspectors and providing them with visas.[16]

5.13 China signed onto the Additional Protocols on 31 December 1998 and the Additional Protocols entered into force for China on 28 March 2002.[17]

Australia's network of nuclear safeguards agreements

5.14 Australia has 19 bilateral safeguards[18] agreements in place providing for the transfer of AONM[19] to 36 countries, including Taiwan.[20]

5.15 Australia's bilateral safeguards agreements provide assurances that AONMs is used solely for peaceful purposes and not diverted to nuclear weapons or for other military purposes. These agreements complement the IAEA's nuclear safeguards system to ensure the peaceful non-explosive use of nuclear material derived from

15 IAEA, IAEA Safeguards: Stemming the Spread of Nuclear Weapons, viewed 8 November 2006, <www.iaea.org>.

16 IAEA, Non-Proliferation of Nuclear Weapons and Nuclear Security: IAEA Safeguards Agreements and Additional Protocols, May 2005, p. 6, viewed 6 November 2006, <www.iaea.org>.

17 IAEA, Safeguards and Verification: Strengthened safeguards system: Status of Additional Protocols, viewed 6 November 2006, <www.iaea.org>.

18 Australia's safeguards agreements are with: the Republic of Korea, the United Kingdom of Great Britain, Finland, the United States of America, Canada, Sweden, France, Euratom (European Atomic Energy Community), Philippines, Japan, Switzerland, Egypt the Russian Federation, Mexico, New Zealand, Czech Republic, the United States of America (covering Taiwan), Hungary and Argentina. NIA Attachment. In addition, Australia has an NPT safeguards Agreement with the International Atomic Energy Agency, concluded on 10 July 1974. Australia also has an Exchange of Notes Constituting an Agreement with Singapore Concerning Cooperation on the Physical Protection of Nuclear Materials, which entered into force on 15 December 1989.

19 AONM refers to uranium and nuclear material derived from it. E.g. plutonium. National Interest Analysis (NIA), para. 10.

20 National Interest Analysis (NIA), para. 10.

Australia. The safeguards included in the Agreements also reiterate Australia's nuclear non-proliferation security interests. These bilateral agreements include IAEA safeguards prescribed by NPT and supplemented by separate safeguards agreements between each State concerned and the IAEA, for the full life of AONM.[21] In addition, Australia has been Party to the Additional Protocols since 12 December 1997.[22]

5.16 Complementary to the IAEA prescribed safeguards, Australia also includes in its bilateral safeguards agreements an Administrative Arrangement (AA) that details how each Party will meet its obligations under the safeguards agreement.[23]

Safeguards included in the Nuclear Material Transfer Agreement

5.17 The Nuclear Material Transfer Agreement is modelled on Australia's existing nuclear safeguards agreements with other NPT nuclear-weapon states, and includes all of the Australian Government's policy requirements for the control of nuclear materials. Specifically:

- Article V assures that AONM supplied to China will be used exclusively for peaceful purposes and will not contribute to the manufacture of nuclear explosive devices, research or development of nuclear weapons or for any military purpose
- Articles IV and VI assure that AONM supplied to China will be subject to China's safeguards agreement with the IAEA for the full life of the material or until safeguards are terminated in accordance with that agreement
- Article VII provides for alternative safeguards that will apply in the event that IAEA safeguards no longer apply
- Article VIII assures that adequate and effective physical protection measures are applied to all AONM during use, storage and transport
- Article IX requires prior Australian consent for any transfer of AONM to a third party, any enrichment to 20 per cent or more in the isotope uranium-235, or reprocessing of AONM
- Article X provides for the conclusion of detailed Administrative Arrangements setting out accounting and reporting procedures

21 NIA, para. 10.

22 IAEA, Safeguards and Verification: Strengthened safeguards system: Status of Additional Protocols, viewed 6 November 2006, <www.iaea.org>.

23 ASNO, *Exhibit 11*, A Guide to Administrative Arrangements, p. 1.

> on AONM between the Australian Safeguards and Non-Proliferation Offie (ASNO) and its Chinese equivalent, the China Atomic Energy Authority (CAEA).[24]

5.18 The Committee was also informed that China's other nuclear material suppliers – Namibia and Kazakhstan, do not have in place the same level of safeguards that Australia does. ASNO informed the Committee:

> The difference between Namibia and Kazakhstan and a number of other uranium suppliers and Australia and countries like Australia that have similar policies, namely the United States and Canada, is that those countries do not require that their uranium be identified as such and be subject to any kind of bilateral undertaking. Both Kazakhstan and Namibia have what is called a peaceful use requirement. They sell the uranium against a pledge by the recipient that the uranium will be used for peaceful use only, but there is not a formal agreement structure that tracks the uranium and checks that that commitment is honoured.[25]

Administrative Arrangements

5.19 The Administrative Arrangements (AAs) are a confidential, less than treaty status document included in Australia's bilateral safeguards agreements. The AAs describe how both Parties will undertake to fulfil the obligations contained in the bilateral safeguards agreement. The AAs are drafted in accordance with IAEA safeguards and to avoid duplication, the AAs use the IAEA's accounting system, but include set procedures by which material included under the corresponding agreement can be identified (country of origin may be traced).[26]

5.20 The AAs apply to nuclear material, material, equipment and technology transferred between Parties. The requirements included in the AAs apply to both Parties and ensure the transfer of material and or equipment and tracking within the recipient's fuel cycles. Once, AONM has been converted into a usable form it becomes subject to IAEA safeguards and inspection activities become responsible for ensuring that nuclear material is used for peaceful purposes.[27]

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24 NIA, para. 11; RIS, pp. 3-4.

25 Mr John Carlson, *Transcript of Evidence*, 25 October 2006, p. 31.

26 ASNO, *Exhibit 11*, A Guide to Administrative Arrangements, p. 1.

27 ASNO, *Exhibit 11*, A Guide to Administrative Arrangements, pp. 1-2.

5.21 For the transfer of nuclear material and technology to take place between Australia and China, and in addition to ratification of the Agreements, ASNO, the Australian Nuclear Science and Technology Organisation (ANSTO) and CAEA must conclude:

- an AA which includes safeguards and accounting requirements
- pursuant to Annex B, a list of eligible facilities must be identified for inspections and monitoring
- for the Nuclear Cooperation Agreement, a written specific instrument between cooperating Parties must be concluded before any collaboration projects begin.[28]

5.22 ASNO would have responsibility for administration and accounting for all uranium exports. ASNO and ANSTO would together be responsible for requirements under the Nuclear Cooperation Agreement.[29]

Monitoring China's AONM and nuclear technology use

China's compliance with the IAEA's nuclear safeguards system

5.23 The IAEA provides that since 1982, China has emulated the laws and regulations relating to nuclear safety as they apply in advanced nuclear power countries, consulted IAEA nuclear safety codes and guides establishing its own nuclear safety regulations system. China's nuclear safety regulation system consists of laws, administrative regulations of the State Council, department rules, nuclear safety guides, standards and specifications.[30]

5.24 In accordance with China's nuclear material safeguards agreement with the IAEA and procedures under the Agreements, monitoring of AONM would be based on procedures applied at the facilities where AONM is handled. ASNO would check reports on AONM provided by China for consistency with information from the IAEA and from other sources. While China would have the right to choose which facilities are eligible for IAEA inspections under its agreements with the IAEA, any facilities using AONM must be jointly agreed by

28 RIS, p. 7.

29 RIS, p. 7.

30 IAEA, People's Republic of China, viewed 1 November 2006, <www.iaea.org> , p. 226.

ASNO and the CAEA, and must be subject to the China-IAEA nuclear material safeguards agreement.[31]

Tracking AONM in China

5.25 ASNO's *A Guide to Administrative Arrangements* provides that the system of accountancy and control established under AAs enables Parties to account for AONM as it moves through the nuclear fuel cycle after it is exported in its raw form from Australia.[32]

5.26 The system of accountancy does this through the principles of proportionality and equivalence. These principles recognise that uranium atoms regardless of origin are indistinguishable. The proportionality principle provides that a recipient country can track AONM through its fuel cycle by attributing a quantity of uranium hexafluoride as being AONM in the same proportion as the original quantity of AONM before conversion. Processing losses are accounted for in the same way. [33]

5.27 Equivalence does not allow for substitution of lower quality material to be included as material that is subject to the Agreement. Reports are regularly exchanged between Parties to enable each Party to account for all nuclear material subject to the Agreement. Reports are updated as material arrives, departs or changes form and takes into account all inventory increases and decreases.[34]

Concerns about inadequate safeguards

5.28 The following concerns relating to the IAEA's international nuclear safeguards system and Australia's nuclear safeguards under the Agreements were raised. In particular, concerns were centred on how the Australian Government can ensure that AONM is used only for peaceful purposes by China and not diverted to make nuclear weapons. The concerns are listed below:

- The AAs are not publicly available and so not open to scrutiny
- IAEA safeguards are inadequate and not applied equally to all countries (declared nuclear weapon states' are not subject to the same IAEA safeguards requirements)

31 NIA, para. 13.

32 ASNO, *Exhibit 11*, A Guide to Administrative Arrangements, pp. 1-2.

33 ASNO, *Exhibit 11*, A Guide to Administrative Arrangements, pp. 1-2.

34 ASNO, *Exhibit 11*, A Guide to Administrative Arrangements, p. 2.

- Application of international safeguards to the China nuclear industry is more symbolic than real and cannot deliver the required levels of transparency and certainty that AONM will be used for peaceful purposes
- AONM can not be tracked under the Agreement, rather an equivalent amount of nuclear material is tracked
- IAEA inspections process is not effective as facilities are decided before inspections take place
- China has inadequate emergency measures in place to deal with nuclear emergencies/incidents
- Inadequate safeguards would lead to China using AONM to manufacture nuclear weapons or at best, increased nuclear material allows China to free up its domestic uranium to manufacture nuclear weapons
- The possibility of weapons manufacture by a declared nuclear weapons state could exacerbate existing regional tensions.

Concerns about tracking AONM in China

5.29 FOEA makes the claim that all of Australia's uranium exports to China could be used in nuclear weapons without breaching the terms of the agreement as long as an equivalent amount of nuclear material is transferred into safeguards, as safeguards do not apply to conversion facilities. The Australian Conservation Foundation (ACF), the Medical Association for the Prevention of War (Australia) (MAPW) and the Women's International League for Peace and Freedom (Australian Section) (WILPF) reiterate this view.[35]

5.30 ASNO responded to this claim and stated that an equivalent amount of uranium is tracked and that the outcome is the same as if AONM has been tracked through the conversion plant:

> Under traditional IAEA practice, conversion facilities are before the "starting point" for safeguards inspection procedures. Furthermore, as safeguards do not apply to "atoms', there is no way of identifying individual atoms as being "Australian." As soon as uranium from Australia is mixed with uranium from other sources in conversion and

35 ACF & MAPW, *Submission 26*, p. 6; Mr David Noonan, *Transcript of Evidence*, 5 October 2006, pp. 2-3; Ms Ruth Russell, *Transcript of Evidence*, 5 October 2006, p. 18.

> other processes, its "national identity" is lost, and the principles of equivalence and proportionality apply to determine which batches of nuclear material are identified as being subject to the Agreement. The Nuclear Transfer Agreement requires that on receipt of Australian uranium in China, an equivalent quantity of uranium in the form of uranium hexafluoride will be added to the inventory of a facility designated for safeguards – e.g. an enrichment plant. The practical effect will be exactly the same as if the uranium had been tracked through the conversion plant.[36]

Concerns about verification measures and procedures

5.31 Concerns were also raised about the effectiveness of IAEA verification procedures. In particular, the Committee was informed that ASNO does not make public any findings of Material Unaccounted For (MUF).

5.32 Further concerns were raised that only three facilities are included under the IAEA's list of agreed facilities for inspection. [37]

5.33 ASNO responded that there are more than three facilities included:

> No, that is not correct. I have not got in my head the full number of facilities that are on the IAEA list, but it includes the two Russian supplied centrifuge enrichment plants plus all foreign supplied power reactors, so from France, Canada, and Japan. So there are several facilities currently on the eligible facility list.[38]

5.34 ASNO confirmed that ten facilities are included and explained how facilities are included on the list of facilities eligible for IAEA inspections:

> Before any nuclear facility in China can be eligible to use, process or store AONM it must be included in the list of facilities eligible for IAEA safeguards, and must also be included on the Delineated Nuclear Fuel Cycle (Capsule) agreed between ASNO and CAEA, in accordance with Annex B of the Nuclear Material Transfer Agreement. Neither party can unilaterally add or remove a facility from the Capsule. The facilities that China has offered for the application of

36 ASNO, *Submission 30*, p. 3.

37 MUF is where an accounting discrepancy has been found. FOEA, *Submission 24*, p. 11.

38 Mr John Carlson, *Transcript of Evidence*, 4 September 2006, p. 26.

> IAEA safeguards included French/UK, Canadian and indigenous power reactors, a research reactor and two enrichment facilities. Australia has no information on China's plans to add to these facilities.[39]

Concerns about diversion of AONM for nuclear weapons manufacture and the impact on regional stability

5.35 A number of organisations and individuals raised concerns in relation to China's potential use of AONM to either divert it to manufacture nuclear weapons or to free up its domestic uranium supplies for the same purpose and the impact this would have on existing regional tensions.[40] These concerns are mixed with concerns about China's breaches of the NPT[41] and that China has not ratified the *Comprehensive Nuclear Test Ban Treaty* (CTBT).[42]

5.36 In addition, several submissions drew attention to comments made by China's Ambassador to Australia, Madame Fu Ying at a Melbourne Mining Club luncheon in December 2005[43] where the Ambassador stated that China has insufficient uranium for both its civil and military nuclear program. As the Anti-Nuclear Alliance of Western Australia (ANAWA) and ACF stated, this has sparked concerns that by providing uranium for China's civil programs, Australia frees-up China's limited domestic uranium reserves for military use.[44]

5.37 In relation to China's past NPT breaches, ASNO stated that China has improved upon its past proliferation record since it joined the NPT in 1992 and became obligated under the treaty to not assist any non-nuclear weapons state to manufacture or acquire nuclear weapons:

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39 ASNO, *Submission 30*, p. 1.

40 Ms Ruth Russell, *Transcript of Evidence*, 5 October 2006, p. 18; Mrs Judith Blyth, *Transcript of Evidence*, 6 October 2006, p. 18.

41 *Treaty on the Non-Proliferation of Nuclear Weapons* is aimed at preventing the spread of nuclear weapons and weapons technology to foster the peaceful uses of nuclear energy and to further the goal of achieving general and complete disarmament. NPT also establishes a safeguards system managed by the IAEA, which takes responsibility under the NPT in areas of technology transfer for peaceful purposes. IAEA, International Conventions and Agreements, viewed 6 November 2006, <www.iaea.org>.

42 The CTBT was opened for signature in September 1996 and prohibits nuclear tests and explosions by member states. CTBT has been ratified by 136 countries of the 176 that are signatories. Preparatory Commission for the Comprehensive Test Ban Treaty Organization, viewed 7 November 2006, <http://pws.ctbto.org/>.

43 ANAWA, Submission 27, p. 4; ACF & MAPW, *Submission 26*, p. 7.

44 ANAWA, *Submission 27*, p. 4; Mr David Noonan, *Transcript of Evidence*, 5 October 2006, p. 3; Mr James Courtney, *Transcript of Evidence*, 6 October 2006, pp. 3-5.

> There have been no findings by the IAEA or NPT Parties at NPT Review Conferences of non-compliance by China with its NPT obligations, or by Nuclear Supplier Group (NSG) members that China has not complied with NSG guidelines.[45]

5.38 ACF responded to the information put forward by ASNO:

> I think it is directly contradicted by, for instance, the Cox report from the US Senate, which states in its conclusions that China's actions in the proliferation of material and technology for weapons of mass destruction posed a direct threat to the US and to its friends and allies. That was in 1999. More recently, the US government have censured a number of Chinese companies and entities for what they said were proliferation breaches of military and other weapons of mass destruction technology. China is, we believe, directly responsible for what they claim to be separate companies and entities. Particularly in an authoritarian state those entities do not exercise a freedom of manoeuvre outside of the interests and the will of the Chinese government.[46]

5.39 ACF puts forward the view that the possibility of China's diversion of AONM for military purposes is because of inadequate safeguards and that China's civil and military nuclear industries are both managed by China's military.[47]

5.40 ASNO provided evidence to the Committee that the Australian Government is confident that China takes its obligations under the NPT and membership of the nuclear export control regimes seriously.[48]

5.41 ASNO added that in addition to IAEA safeguards, Australia was relying on trust that AONM would not be diverted to non-peaceful uses by China and that China had no reason to divert AONM to other than its intended purpose:

> Obviously, there is a degree of trust in any international treaty, but the trust is underpinned by fairly rigorous procedures. Australian uranium will only be going into civil facilities which are covered by the IAEA safeguards agreement. There is no process by which China would divert

45 ASNO, *Submission 30*, p. 5.

46 Mr David Noonan, *Transcript of Evidence*, 5 October 2006, p. 4.

47 Mr David Noonan, *Transcript of Evidence*, 5 October 2006, p. 5.

48 ASNO, *Submission 30*, p. 5.

> our material from those facilities and, as I said earlier, there is no reason that it would seek to do so.[49]

5.42 ACF recommends that in view of inadequate safeguards that there should not be any provision for enrichment or reprocessing facilities under the Agreements. ACF reiterated the threat of nuclear arms races and the need to stop providing nuclear material for armament. [50]

5.43 ANAWA shared this view and added that the Australian Government is side-stepping the issue of China's past nuclear proliferation record:

> Our government's fear of upsetting the Chinese or damaging economic prospects is leading to a situation that is going to be looked back on in future as a very damaging thing to Australia's national interest and security, not to mention the destabilisation of Asia. If North Korea tests a weapon, I think we are going to see a rapid rollout of proliferation in that region. I will not get started on Japan's program at this point, but it is clear that that region is teetering on the brink of a burst of nuclear weapons expansion.[51]

5.44 ASNO argued that by including China as one of its bilateral safeguards partners Australia was strengthening nuclear safeguards.

> Australia maintains a regular dialogue with China on arms control and non-proliferation issues. The safeguards agreements with China will provide further impetus to develop this dialogue. The agreements support the objective of promoting the application of best practice nuclear safeguards and security in China. They provide the basis for coverage of a substantial proportion of nuclear material in use in China by Australia's strict nuclear safeguards and security arrangements. More generally, adding China to Australia's network of bilateral safeguards partners provides the basis for a substantial increase in the proportion of nuclear material in international use that is covered by Australia's strict safeguards requirements.[52]

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49 Mr John Carlson, *Transcript of Evidence*, 4 September 2006, pp. 27-28.

50 Mr David Noonan, *Transcript of Evidence*, 5 October 2006, p. 5.

51 Mr James Courtney, *Transcript of Evidence*, 6 October 2006, p. 4.

52 ASNO, *Submission 30*, p. 4.

Concerns about Administrative Arrangements

5.45 Concerns were raised about the confidentiality attached to AAs that will apply to the bilateral safeguards included in the Agreements. In particular, that AAs are confidential on the request of bilateral partners ahead of due process and transparency in Australia. ACF and MAPW stated:

> … it is contrary to the proper exercise of public and Parliamentary scrutiny of the proposed treaty, and an unacceptable practice of secrecy by ASNO, to fail to make public the key "Administrative Arrangements" to enact the Australian bilateral safeguards agreement in China. Without this public access no one can independently know if the proposed practice of safeguards can match the claims. Or if the ASNO accounting practices of 'equivalence' and of 'proportionality' are to be credibly or otherwise applied to Australian Obligated Nuclear Materials in China.[53]

5.46 ASNO responded to concerns about AAs stating that it was practice for AAs to be confidential:

> … under all of Australia's bilateral agreements Administrative Arrangements are less-than-treaty-level, establishing working-level arrangements between ASNO and its counterpart in the country concerned (in this case, the China Atomic Energy Authority). In accordance with long-standing practice, at the request of a number of ASNO's counterparts, Administrative Arrangements are treated as being confidential between the parties.[54]

5.47 ASNO also informed the Committee that the Australia/China AAs are almost entirely agreed upon and will be concluded by the end of 2006.[55]

China's nuclear emergency procedures and occupation health and safety

5.48 The Committee was concerned about information it received that China does not have a system in place for adequate emergency planning to deal with nuclear emergencies.

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53 ACF & MAPW, *Submission 26*, p. 5.

54 ASNO, *Submission 30*, p. 3.

55 ASNO, *Submission 30*, p. 3.

5.49 ANSTO informed the Committee that China is not complacent about its emergency planning:

> National reports under the Convention on Nuclear Safety describe in some detail the current situation regarding safety of nuclear power reactors in the country concerned, and also contain a section looking forward to planned activities to further improve safety in the coming years. China's most recent National Report (2005) contained significant information about their current emergency planning, covering basic requirements for emergency preparedness, the specific measures in place, training and exercises for emergency preparedness, progress for emergency preparedness activities and international arrangements. The report indicated that this is an issue that they take very seriously, and that a range of improvements had been implemented over the period since the 2002 Review Meeting. Under the "looking forward" section, they described further actions that they would take in the near future. We do not see this as an admission that current processes are inadequate- rather, an indication that they are not complacent.[56]

Concerns about the IAEA's safeguards system

5.50 Concerns about inadequacies in elements of the IAEA's safeguards system consisting of the NPT and Additional Protocols includes tracking AONM and the IAEA's verification and inspection processes. A number of submissions have put the view that the IAEA's safeguards system is close to collapsing.

5.51 In this regard, ANAWA stated:

> I actually think that the nuclear non-proliferation treaty has completely failed and that underpinning agreements for the peaceful use of nuclear technology or the export of uranium to China based on the hope that the NPT is going to somehow keep things under control is optimistic in the extreme. I think it is quite clear that all the weapons states are in contravention of the NPT. They have all failed to meet their obligations to disarm, and I think it is quite telling that China has been criticised for breaking its article I commitment, which is the ban on sharing nuclear technology for military

56 ANSTO, *Submission 20*, p. 1.

> uses. That is not just my opinion; that is actually an opinion that was put forward by the US Department of State in its August 2005 report.[57]

5.52 Several organisations have supported the view that the IAEA's safeguards system is weakening because of comments made by the IAEA Director-General, Dr Mohamed ElBaradei on 25 March 2006 in relation to the IAEA's verification budget. Dr ElBaradei stated that the IAEA's verification budget operates on 100 million Euros per annum, which is comparable to the budget of a local police department:

> With these resources, we oversee approximately 900 nuclear facilities in 71 countries. When you consider our growing responsibilities – as well as the need to stay ahead of the game – we are clearly operating on a shoestring budget.[58]

5.53 The Director General of ASNO appeared to argue that the IAEA's verification budget is adequate:

> I have seen recent statements about this. For instance, Dr ElBaradei said last week that the safeguards budget is only about the same as the Vienna Police Department. I am not sure whether that is quite true. The safeguards budget is currently about $US120 million a year; plus some voluntary funding, which amounts to another $US20 million or so; plus a range of projects that countries, including Australia, carry out to benefit the IAEA. There are activities under some 16 'support programs'.[59]

5.54 ASNO clarified that the IAEA budget was being spent in more effective ways than it used to be:

> At one time the IAEA system was very heavily built around uniformity—safeguards would be the same in each and every country. This ended up with something like 60 per cent of safeguards efforts being spent in Germany, Japan and Canada when we know that the problems lie elsewhere. So, when we say the budget does not look as if it is good enough, I think it is quite important that we ensure that the budget is being spent in productive ways that are focusing on problem areas, and that has been the direction for developing the safeguards

57 Mr James Courtney, *Transcript of Evidence*, 6 October 2006, p. 2.

58 Dr Mohamed ElBaradei, *Putting Teeth in the Nuclear Non-Proliferation and Disarmament Regime*, 25 March 2006, viewed 7 November 2006, <www.iaea.org>.

59 Mr John Carlson, *Transcript of Evidence*, 25 October 2006, p. 30.

> system. A good deal more attention is being given to what we call 'information-driven safeguards' that are directing verification effort towards problem areas. So the budget stays under review. The board of governors is satisfied for the moment that it stays under review.[60]

5.55 ASNO explained that the IAEA Board of Governors was reviewing the IAEA inspection and verification budget for the purpose of strengthening safeguards, particularly through improvements in efficiency:

> The question is: is that enough money to do the job? This has been looked at very carefully by the IAEA Board of Governors and by experts, and there are two directions in which our efforts have gone. One direction is to increase the budget—from memory, it was increased by 16 per cent three years ago—and that is subject to further review. The other direction is to make safeguards more efficient, and there has been a major program as part of a program to strengthen safeguards. … there may be an impression that it is only recently that attention has been given to strengthening safeguards through the creation of the IAEA Special Committee on Safeguards and Verification, for instance. In fact, there has been a very active program of strengthening safeguards since the first Gulf War in the early 1990s, with particular emphasis on developing ways of detecting undeclared nuclear activities. Part of that program has also been about how to prioritise safeguards work so as to make the system more efficient.[61]

5.56 The Committee was interested to know whether Australia was involved in measures to increase the safeguards budget.

5.57 ASNO informed the Committee that Australia is not currently putting forward a particular proposal in this regard, but rather assessing whether it can make efficiency savings in its operations:

> At this stage, we are not promoting a particular proposal. The agency is going through a process of introducing what are called integrated safeguards. These are developing the optimum combination of what are called traditional safeguards measures—regular inspections, accountancy,

60 Mr John Carlson, *Transcript of Evidence*, 25 October 2006, p. 30.

61 Mr John Carlson, *Transcript of Evidence*, 25 October 2006, p. 30.

> cameras, seals and that sort of thing—with the activities possible under the additional protocol, which give wider access and a broader range of information. The agency is looking at how to get the optimum combination for each state. As part of that, we expect savings to be made which can then be diverted to problem areas. We are really reviewing how that process is working out before we can come to some judgement about whether there is a need for additional resources at the moment.[62]

62 Mr John Carlson, *Transcript of Evidence*, 25 October 2006, pp. 30-31.