

9. Nuclear arms control and non-proliferation

SHANNON N. KILE

I. Introduction

In 2008 the nuclear programmes of three states—Iran, North Korea and Syria—were at the centre of international controversies about the proliferation of nuclear weapons. The International Atomic Energy Agency (IAEA) was unable to resolve questions about alleged nuclear weapon-related studies carried out by Iran that raised doubts about the country's claim that its nuclear programme was exclusively peaceful in nature.¹ At the same time, Iran refused to comply with several United Nations Security Council resolutions demanding that it suspend its uranium enrichment programme. In East Asia the implementation of the agreement reached at the Six-Party Talks in 2007 on a denuclearization plan for the Democratic People's Republic of Korea (DPRK, or North Korea) broke down at the end of the year. In Syria the results of an IAEA investigation suggested that an undeclared nuclear reactor may have been under construction at a remote site that was bombed by Israel in 2007.

Elsewhere, the United States Senate approved changes to US law allowing the controversial Indian–US Civil Nuclear Cooperation Initiative (CNCI) to enter into force. This followed a decision by the Nuclear Suppliers Group (NSG) to exempt India from a key restriction on nuclear exports to the country.² The United States and the Russian Federation continued their discussions about replacing the landmark 1991 Treaty on the Reduction and Limitation of Strategic Offensive Arms (START Treaty), which is set to expire in December 2009.³ These talks took place against the background of renewed international interest in nuclear disarmament, as mandated by the 1968 Treaty on the Non-proliferation of Nuclear Weapons (Non-Proliferation Treaty, NPT).⁴ In Geneva, efforts at the 65-member Conference on Disarmament (CD) to open negotiations on a global fissile material cut-off treaty (FMCT) failed for the 12th consecutive year.⁵

¹ For a brief description and list of member states of the IAEA see annex B in this volume.

² On the implementation of the CNCI see chapter 12, section II, in this volume.

³ For a summary and other details of the START Treaty see annex A in this volume.

⁴ For a summary and other details of the NPT see annex A in this volume.

⁵ For a brief description and list of member states of the CD see annex B in this volume.

This chapter reviews the main developments in nuclear arms control and non-proliferation in 2008. Section II describes developments related to Iran's nuclear programme and summarizes the IAEA's findings about the country's past and current nuclear activities. Section III describes the implementation of the diplomatic deal reached in the Six-Party Talks in which North Korea pledged to give up its nuclear infrastructure in return for economic and security benefits. Section IV describes the findings of the IAEA inspection of a suspected undeclared reactor site in the Syrian desert. Section V examines Russian–US nuclear arms control discussions, while section VI describes developments in multilateral arms control and non-proliferation initiatives. Section VII presents the conclusions.

II. Iran and nuclear proliferation concerns

The year 2008 opened with few prospects for resolving the diplomatic impasse at the UN Security Council over Iran's nuclear programme.⁶ Iran continued to defy the Security Council's demands, set out in resolutions 1696, 1737 and 1747, that it immediately suspend all uranium enrichment and plutonium reprocessing activities.⁷ Iran also continued to reject the Security Council's call for it to take a number of steps, including in particular the ratification and implementation of an Additional Protocol to its comprehensive safeguards agreement, which the IAEA Board of Governors has deemed necessary in order for Iran to restore international confidence about the exclusively peaceful nature of its nuclear programme.⁸

On 3 March 2008 the Security Council adopted Resolution 1803 in which it deplored Iran's failure to establish 'full and sustained suspension of all enrichment related and reprocessing activities and heavy water-related projects'.⁹ The new resolution modestly strengthened the sanctions targeting Iran's nuclear and ballistic missile programmes that the Security Council had adopted, under Article 41 of Chapter VII of the UN Charter, in

⁶ See Kile, S. N., 'Nuclear arms control and non-proliferation', *SIPRI Yearbook 2008: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2008), p. 340.

⁷ UN Security Council Resolution 1696, 31 July 2006; Resolution 1737, 23 Dec. 2006; and Resolution 1747, 24 Mar. 2007. UN Security Council resolutions are available at <<http://www.un.org/sc/>>.

⁸ Iran was an original signatory of the 1968 NPT, as a non-nuclear weapon state. Its comprehensive safeguards agreement with the IAEA (INFCIRC/214) entered into force on 15 May 1974. In Dec. 2003 Iran signed an Additional Protocol to its comprehensive safeguards agreement that gave IAEA inspectors enhanced powers to investigate possible undeclared nuclear activities. In Feb. 2006 the IAEA Board voted to report Iran's nuclear file to the UN Security Council, expressing 'serious concern' about Iran's 'many failures and breaches of its obligations to comply' with its safeguards agreement. In protest at this decision, Iran announced that it would no longer act in accordance with the provisions of the Additional Protocol, which had yet to be ratified by the Iranian Parliament (Majlis). IAEA, Board of Governors, 'Implementation of the NPT safeguards agreement in the Islamic Republic of Iran', Resolution, GOV/2006/14, 4 Feb. 2006. The IAEA documents cited here are available on the IAEA website, <<http://www.iaea.org/>>.

⁹ UN Security Council Resolution 1803, 3 Mar. 2008.

resolutions 1737 and 1747.¹⁰ The new resolution expanded the scope of restrictions on nuclear-related technology transfers to Iran to include all dual-use equipment and materials regulated by the NSG.¹¹ It also extended the financial sanctions contained in resolutions 1737 and 1747 to additional persons and entities, including front companies and contractors, believed to be ‘engaged in, directly associated with or providing support for Iran’s proliferation sensitive nuclear activities or for the development of nuclear weapon delivery systems’. In addition, it authorized states to carry out inspections ‘at their airports and seaports’ of cargo carried on aircraft and vessels owned or operated by certain Iranian companies, provided that there were ‘reasonable grounds to believe’ that the cargo contained goods prohibited under the sanctions resolutions.¹² Iranian officials sharply criticized Resolution 1803 as an ‘unjust’ decision in which the Security Council had overstepped its authority under the UN Charter.¹³

The revised P5+1 proposal

In conjunction with the adoption of Resolution 1803, the foreign ministers of the P5+1 states (the five permanent members of the Security Council—China, France, Russia, the United Kingdom and the USA—and Germany) issued a statement reaffirming their commitment to a diplomatic settlement of the nuclear issue that offered Iran ‘substantial opportunities’ for political, security and economic benefits.¹⁴ They subsequently agreed to offer Iran a renewed package of economic and political incentives, based on a proposal they had made to Iran in June 2006, which aimed at persuading the Iranian public of the benefits to be gained by suspending the country’s uranium enrichment programme.¹⁵ Iran had declined the original offer, complaining that the temporary suspension of enrichment envisaged by the

¹⁰ Chapter VII of the UN Charter concerns ‘Action with respect to threats to the peace, breaches of the peace, and acts of aggression’. Article 41 permits measures other than the use of armed force. The Charter of the United Nations was signed on 26 June 1945 and entered into force on 24 Oct. 1945. Its text is available at <<http://www.un.org/aboutun/charter/>>.

¹¹ On the activities of the NSG see chapter 12 in this volume.

¹² Some UN member states expressed reservations about this provision due to concerns that it could lead to armed confrontation. Crail, P., ‘Security Council adopts more Iran sanctions’, *Arms Control Today*, vol. 38, no. 3 (Apr. 2008).

¹³ Khazaee, M., Permanent Representative of the Islamic Republic of Iran to the United Nations, Statement reproduced in United Nations, Security Council, ‘Security Council tightens restrictions on Iran’s proliferation-sensitive nuclear activities, increases vigilance over Iranian banks, has states inspect cargo’, SC/9268, 3 Mar. 2008, <<http://www.un.org/News/Press/docs/2008/sc9268.doc.htm>>.

¹⁴ Statement by the foreign ministers of China, France, Germany, Russia, the United Kingdom and the United States with support of the High Representative of the European Union, S096/08, New York, 3 Mar. 2008, <<http://www.consilium.europa.eu/App/Solana/list.aspx?id=246&bid=109&page=arch&archDate=2008&archMonth=3>>.

¹⁵ Associated Press, ‘Agreement reached on incentives for Iran on nuclear program’, *Los Angeles Times*, 2 May 2008.

P5+1 states would in fact be tantamount to a permanent cessation of the programme.¹⁶

The revised P5+1 proposal was presented in Tehran by the European Union's High Representative for the Common Foreign and Security Policy, Javier Solana. The proposal outlined potential cooperation with Iran in the areas of transportation and infrastructure development, nuclear energy, civil aviation, agriculture and regional security.¹⁷ The P5+1 states reaffirmed Iran's right to develop nuclear energy for peaceful purposes 'in conformity with its NPT obligations' and promised 'to treat Iran's nuclear programme in the same manner as that of any Non-nuclear Weapon State Party to the NPT once international confidence in the exclusively peaceful nature of Iran's nuclear programme is restored'.¹⁸ They pledged to support the construction of a light-water nuclear power reactor in Iran and to provide Iran with legally binding nuclear fuel supply guarantees. The proposal also contained a commitment to support research and development in nuclear energy 'as international confidence is gradually restored'.¹⁹ However, it was unclear whether this latter commitment meant, for example, that Iran could carry out centrifuge research and development work while some safeguards compliance questions remained unresolved. Solana proposed a six-week 'freeze-for-freeze' period, during which Iran would not expand its enrichment programme and the P5+1 states would not pursue additional Security Council sanctions while the parties worked out practical arrangements for resuming negotiations.

The renewed P5+1 incentives package elicited a mixed reaction from Iran. While not rejecting it outright, senior officials there indicated that Iran would not curtail its peaceful nuclear activities, including uranium enrichment, which it had a legal right to pursue.²⁰ At the same time, the Secretary of Iran's Supreme National Security Council, Saeed Jalili, noted that there were a number of 'common points' in the P5+1 proposal and an Iranian proposal for resolving the nuclear controversy, put forward in May 2008, that could provide a basis for new negotiations.²¹ Described as a basis for comprehensive and 'constructive' negotiations with the P5+1 countries, the Iranian offer had outlined three broad areas for potential cooperation:

¹⁶ See Kile, S. N., 'Nuclear arms control and non-proliferation', *SIPRI Yearbook 2007: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2007), pp. 490–91.

¹⁷ IAEA, Communication dated 25 June 2008 received from the Resident Representative of the United Kingdom to the Agency concerning a letter and offer of 12 June 2008 delivered to the Islamic Republic of Iran, Information Circular INFCIRC/730, 1 July 2008.

¹⁸ IAEA, INFCIRC/730 (note 17). US officials had indicated in June 2006 that it would be likely to take Iran many years to restore international confidence.

¹⁹ IAEA, INFCIRC/730 (note 17).

²⁰ Iran will only talk on common points with 5+1', *Tehran Times*, 13 July 2008; and Sciolino, E., 'Iran responds obliquely to nuclear plan', *New York Times*, 5 July 2008.

²¹ '“Constructive” nuclear talks require change in U.S. policy', *Tehran Times*, 19 July 2008.

political and security, economic and nuclear energy.²² It had emphasized the importance of promoting nuclear energy and non-proliferation. However, it did not explicitly mention Iran's nuclear programme or any nuclear-related commitments that Iran might be willing to undertake, including on the central issue of suspending its uranium enrichment activities.

On 19 July 2008 negotiators from Iran and the P5+1 states met in Geneva, Switzerland, to discuss the latter's renewed package proposal. The meeting was attended by the US Undersecretary of State, William Burns, whose presence marked the highest level official contact between Iran and the USA since 1979.²³ The P5+1 states pressed Iran to accept the freeze-for-freeze formula as a goodwill gesture to pave the way for opening negotiations on the package proposal. However, Jalili, Iran's chief negotiator, reportedly avoided answering questions about whether Iran would be willing to temporarily freeze its enrichment programme.²⁴ Comments made by other senior Iranian officials suggested that the country's position on suspension had not changed. Iran's Supreme Leader, Ayatollah Ali Khamenei, stated on 30 July that the country would continue along its 'clear path' of nuclear work, which included uranium enrichment.²⁵

On 27 September 2008, following a report from the IAEA Director General, Mohammad ElBaradei, that Iran had made significant progress with its centrifuge enrichment programme, the UN Security Council unanimously adopted Resolution 1835 calling on Iran to 'comply fully and without delay with its obligations' set out in the earlier resolutions.²⁶ The action came amid signs of growing divisions among the P5 states over how to implement its dual-track 'carrot-and-stick' strategy for resolving the nuclear issue. While reaffirming its previous resolutions, the Security Council did not impose additional sanctions on Iran or suggest that non-compliance could lead to further penalties. China and Russia reportedly rejected calls by France, the UK and the USA to include new sanctions in the resolution.²⁷ In addition, Indonesia, a non-permanent member of the Security Council, said that it would only support a new resolution on Iran

²² IAEA, Communication dated 16 June 2008 received from the Permanent Mission of the Islamic Republic of Iran to the Agency concerning the text of the 'Islamic Republic of Iran's proposed package for constructive negotiation', Information Circular INFCIRC/729, 18 June 2008.

²³ 'US attends historic Iran meeting', BBC News, 29 July 2008, <<http://news.bbc.co.uk/2/7515104.stm>>.

²⁴ Kessler, G., 'Iran nuclear talks end without agreement', *Washington Post*, 19 July 2008.

²⁵ Islamic Republic News Agency (IRNA), 'Supreme Leader: Iranians determined to follow up their clear path', 30 July 2008, <<http://www1.irna.ir/en/news/view/line-22/0807302434170510.htm>>; and Bowley, G., 'Iran leader committed to nuclear path', *International Herald Tribune*, 30 July 2008.

²⁶ UN Security Council Resolution 1835, 27 Sep. 2008. Unlike the 4 prior Security Council resolutions on Iran, Resolution 1835 was not adopted under Chapter VII of the UN Charter (note 10).

²⁷ MacFarquhar, N., 'Security Council presses Iran on nuclear program', *New York Times*, 27 Sep. 2008.

that ‘provided incentives—not disincentives—to negotiations’.²⁸ The lack of consensus on how to address Iran’s nuclear activities of concern led the USA and its allies to discuss imposing additional sanctions against Iran outside of the Security Council.²⁹

The diplomatic deadlock over the Iranian nuclear programme led to renewed speculation that military counter-proliferation options were under serious consideration in Israel in spite of US misgivings. Senior Israeli political leaders stated that Israel would have no choice but to use military force if Iran continued with its enrichment activities and a June 2008 Israeli Air Force exercise over the Mediterranean Sea appeared to be a rehearsal for a large-scale air attack on Iran’s nuclear facilities and other targets.³⁰ In contrast, the publication in November 2007 of an unclassified version of the latest US National Intelligence Estimate on Iran, which had concluded with ‘high confidence’ that Iran was not currently pursuing a dedicated nuclear weapon programme, was widely seen as having undercut political support for US military action against the Iranian nuclear programme.³¹ US President George W. Bush reportedly rejected during 2008 a request by Israel for US-made ‘bunker-busting’ bombs with which it wanted to attack Iran’s nuclear facilities.³²

The IAEA Director General’s assessment of Iran’s nuclear programme

On 19 November 2008 ElBaradei issued the latest in a series of reports to the IAEA Board of Governors describing the agency’s progress in verifying Iran’s implementation of its comprehensive safeguards agreement and the status of Iran’s compliance with UN Security Council resolutions 1737, 1747 and 1803.³³ The report had two main findings. The first was that Iran had suspended neither its enrichment-related activities nor its construction of the heavy-water reactor at Arak, as demanded by the resolutions. The second was that the IAEA had been unable to make any substantive

²⁸ United Nations, Security Council, ‘Security Council reaffirms earlier resolutions on Iran’s uranium enrichment, calls on country to comply with obligations “fully and without delay”’, SC/9459, 27 Sep. 2008, <<http://un.org/News/Press/docs/2008/sc9459.doc.htm>>.

²⁹ Crail, P., ‘West may seek alternative sanctions on Iran’, *Arms Control Today*, vol. 38, no. 9 (Nov. 2008).

³⁰ ‘Israeli minister threatens Iran’, BBC News, 6 June 2008, <<http://news.bbc.co.uk/2/7440472.stm>>; and Gordon, M. R. and Schmitt, E., ‘U.S. says Israeli exercise seemed directed at Iran’, *New York Times*, 20 June 2008.

³¹ US Office of the Director of National Intelligence, *Iran: Nuclear Intentions and Capabilities*, National Intelligence Estimate (National Intelligence Council: Washington, DC, Nov. 2007), <http://www.dni.gov/press_releases_2007_4.htm>, Key judgement A.

³² Sanger, D. E., ‘U.S. rejected aid for Israeli raid on Iranian nuclear site’, *New York Times*, 10 Jan. 2009.

³³ IAEA, Board of Governors, ‘Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions 1737 (2006), 1747 (2007), 1803 (2008) and 1835 (2008) in the Islamic Republic of Iran’, Report by the Director General, GOV/2008/59, 19 Nov. 2008.

progress in its investigation of Iranian nuclear activities with possible military dimensions.

Progress in the centrifuge enrichment programme and reactor construction

ElBaradei reported that Iran was either installing or operating approximately 6000 of its first-generation gas centrifuges (the IR-1) at the underground Fuel Enrichment Plant (FEP) near Natanz.³⁴ Iranian technicians were feeding uranium hexafluoride (UF₆) gas into one completed centrifuge module, consisting of 18 164-centrifuge cascades (with a total of 2952 centrifuges).³⁵ They were installing a second 18-cascade module, of which 5 cascades were operational; the installation of the remaining 13 cascades was continuing. Based on its declared UF₆ feed rates, in 2008 Iran achieved a significant improvement in the performance and operational stability of the IR-1 centrifuges compared to 2007.³⁶ In October 2008 Iran informed the IAEA that it would begin installing another 3000 centrifuges in 2009.³⁷

ElBaradei also reported that Iran was continuing to develop and test a small number of next-generation centrifuges—the IR-2 and the IR-3 models—at the Pilot Fuel Enrichment Plant (PFEP) at Natanz.³⁸ There is evidence that the IR-2 centrifuge, of which there are several variants, is an Iranian modification of the Pakistani P-2 centrifuge that Iran secretly obtained from the A. Q. Khan network in the 1990s.³⁹ However, there is little publicly available information about the enrichment capacities of the new designs.⁴⁰

ElBaradei reported that Iran's production of UF₆ was proceeding apace at the Uranium Conversion Facility (UCF) at Esfahan.⁴¹ The accumulated stock of UF₆ suggested that the UCF was operating at near-full capacity.

³⁴ IAEA, GOV/2008/59 (note 33), pp. 1–2.

³⁵ Natural uranium contains more than 99% of the isotope uranium-238 (U-238) and less than 1% uranium-235 (U-235). Low-enriched uranium (LEU), which is suitable for use in reactors, is uranium that has been enriched to 0.72–20% U-235 (typically, 3–5%). Highly enriched uranium (HEU) is uranium that has been enriched to more than 20% U-235; weapon-grade HEU is generally considered to be uranium enriched to more than 90% U-235. The gas centrifuge enrichment process (as used by Iran) involves first the production of the gas uranium hexafluoride (UF₆) from yellowcake (a substance obtained from uranium ore). The gas is then passed through a cascade of centrifuges, which, taking advantage of the different masses of the uranium isotopes, step-by-step increase the concentration of U-235. Krass, A. S. et al., SIPRI, *Uranium Enrichment and Nuclear Weapon Proliferation* (Taylor & Francis: London, 1983), pp. 1–11.

³⁶ Albright, D., Shirer, J. and Brannan, P., 'IAEA report on Iran: enriched uranium output steady; centrifuge numbers expected to increase dramatically; Arak reactor verification blocked', Institute for Science and International Security (ISIS) Issue Brief, 19 Nov. 2008, <<http://www.isis-online.org/publications/iran/>>.

³⁷ IAEA, GOV/2008/59 (note 33), p. 2.

³⁸ IAEA, GOV/2008/59 (note 33), p. 2.

³⁹ On the Khan network, led by Pakistani scientist Abdul Qadeer Khan, see Fitzpatrick, M. (ed.), *Nuclear Black Markets: Pakistan, A. Q. Khan and the Rise of Proliferation Networks*, International Institute for Strategic Studies (IISS) Strategic Dossier (Routledge: Abingdon, 2007).

⁴⁰ Broad, W. J., 'A tantalizing look at Iran's nuclear program', *New York Times*, 29 Apr. 2008.

⁴¹ IAEA, GOV/2008/59 (note 33), p. 3.

However, at the end of 2008 Iran was reportedly running out of the imported uranium yellowcake, which is used to produce the bulk of this stock. While Iran was developing its own uranium mines, it was believed to lack enough domestically mined uranium ore to be able to produce the quantity of UF₆ needed for its centrifuge programme.⁴² Iranian officials denied the reports and insisted that the country had ample uranium ore reserves to support its nuclear activities.⁴³

As of 7 November 2008, Iran had produced a total of approximately 630 kilograms of low-enriched uranium (LEU) since enrichment operations began in February 2007.⁴⁴ Some analysts warned that this figure indicated that Iran was nearing a key milestone when it would have accumulated enough LEU—700–800 kg according to one estimate—to have a capability to rapidly produce enough highly enriched uranium (HEU) for a nuclear weapon.⁴⁵ Others cautioned that the milestone was only symbolic, since all nuclear material and installed cascades were under IAEA containment and surveillance measures and any Iranian attempt to ‘break out’ and produce weapon-grade HEU would alert the international community.⁴⁶

In addition to proceeding with its uranium enrichment programme, Iran was continuing to build the 40-megawatt-thermal (MW(t)) heavy water-moderated IR-40 reactor near Arak. ElBaradei reported that in October 2008 Iran refused to allow inspectors to visit the site to conduct a scheduled Design Information Verification (DIV).⁴⁷ Iran’s refusal was based on its decision in March 2007 to unilaterally suspend a subsidiary safeguards agreement concerning the early provision of design information about safeguarded facilities (the modified text of Code 3.1 of its subsidiary arrangements).⁴⁸ ElBaradei said that, as a result of the Iranian decision, the IAEA’s information on the status of the reactor was limited to that available through satellite imagery.⁴⁹

⁴² Pagnamenta, R., Evans, M. and Halpin, T., ‘Iran in scramble for fresh uranium supplies’, *The Times*, 24 Jan. 2009.

⁴³ Nuclear Threat Initiative (NTI), ‘Iran denies uranium yellowcake shortage’, Global Security Newswire, 30 Jan. 2009, <http://gsn.nti.org/gsn/nw_20090130_7747.php>.

⁴⁴ IAEA, GOV/2008/59 (note 33), p. 1.

⁴⁵ Albright, Shirer and Brannan (note 36). See also note 35.

⁴⁶ Broad, W. J. and Sanger, D. E., ‘Iran said to have nuclear fuel for one weapon’, *New York Times*, 19 Nov. 2008.

⁴⁷ IAEA, GOV/2008/59 (note 33), p. 2. The DIV was intended to verify, among other things, Iran’s information that a hot cell facility adjacent to the reactor will not be used for plutonium separation.

⁴⁸ Kile (note 6), p. 340.

⁴⁹ IAEA, GOV/2008/59 (note 33), p. 2. ElBaradei reiterated the IAEA’s view that Code 3.1 concerned the submission of design information, not the frequency of verification visits, and that the IAEA’s ‘right to carry out DIV is a continuing right’ which was not dependent on a facility’s stage of construction.

The impasse over alleged nuclear weapon-related activities by Iran

ElBaradei reported that IAEA safeguards inspectors remained unable to resolve a number of 'issues of serious concern'.⁵⁰ He called on Iran to extend greater cooperation in addressing the following issues: the origins of a document, discovered by inspectors in Iran in 2006, that describes procedures for the casting of enriched and depleted uranium metal into hemispheres related to the fabrication of nuclear weapon components; the role of Iranian military entities in the procurement of items for Iran's nuclear programme; the production of nuclear equipment and components by Iranian defence companies; and allegations that Iran carried out studies related to certain aspects of nuclear weapon design.⁵¹

ElBaradei had previously indicated that the last of these—the alleged weaponization studies—was the issue on which the IAEA was most in need of clarification and cooperation from Iran. In a briefing given to the IAEA Board on 25 February 2008, the Deputy Director General for Safeguards, Olli Heinonen, outlined the alleged studies.⁵² These had to do with work on the conversion of uranium dioxide into uranium tetrafluoride ('green salt'); design and engineering work on the payload chamber of the Shahab-3 ballistic missile re-entry vehicle, apparently in order to modify it to carry a nuclear weapon; and experiments with the symmetrical detonation of a hemispherical high explosive charge that had direct application for manufacturing an implosion-type nuclear weapon. Heinonen told the IAEA Board that the projects appeared to have administrative connections and reported to the same office under the Iranian Ministry of Defence and Armed Forces Logistics.⁵³ In September 2008 ElBaradei reported that Iran may have obtained 'foreign assistance' in conducting the high explosive experiments.⁵⁴ According to media reports citing IAEA officials, this expertise was linked to a Russian scientist working for Iran without the approval of the Russian Government.⁵⁵

ElBaradei reported that the IAEA remained unable to substantiate the allegations about Iran's nuclear weapon-related activities. However, the agency's investigations were based on information obtained from Iranian documents as well as on information provided by certain IAEA member

⁵⁰ IAEA, GOV/2008/59 (note 33), p. 4.

⁵¹ IAEA, GOV/2008/59 (note 33), pp. 3–4.

⁵² Institute for Science and International Security (ISIS), 'Briefing notes from February 2008 IAEA meeting regarding Iran's nuclear program', ISIS Report, 11 Apr. 2008, <<http://www.isis-online.org/publications/iran/>>.

⁵³ Institute for Science and International Security (note 52).

⁵⁴ IAEA, Board of Governors, 'Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions 1737 (2006), 1747 (2007) and 1803 (2008) in the Islamic Republic of Iran', Report by the Director General, GOV/2008/38, 15 Sep. 2008.

⁵⁵ Sciolino, E., 'Nuclear aid by Russia to Iranians suspected', *New York Times*, 9 Oct. 2008.

states.⁵⁶ ElBaradei had previously noted that the latter ‘appears to have been derived from multiple sources over different periods of time, is detailed in content, and appears to be generally consistent’.⁵⁷

In 2008 Iran continued to categorically deny that it had ever worked on nuclear weapons. Iranian officials either dismissed documents pertaining to the alleged studies as forgeries and fabrications or, where they acknowledged the factual basis of some of the information, insisted that the work had nothing to do with nuclear weapons. In addition, Iran stated that it had never agreed to include the alleged studies as one of the issues to be resolved in the framework of the work plan adopted by Iran and the IAEA in 2007.⁵⁸ Instead, as a goodwill gesture, Iran had agreed to ‘review and inform the Agency of its assessment’ of the allegations, following the IAEA’s submission to Iran of all relevant documents that it had in its possession: Iran was not obligated to give IAEA inspectors access to individuals who the agency believed could provide additional information about some of the alleged studies. Iran also complained that it had not received original versions of the documents provided to it by the IAEA, which would allow Iran to prove that they were forged or fabricated.⁵⁹

The year 2008 ended with a deepening impasse between Iran and the IAEA over the alleged studies and other issues of concern. ElBaradei lamented the ‘regrettable’ lack of cooperation from Iran in providing the IAEA with access to relevant documentation and personnel.⁶⁰ He emphasized that until Iran provided greater transparency in its nuclear activities, and implemented the Additional Protocol, the IAEA could not ‘provide credible assurance about the absence of undeclared nuclear material and activities in Iran’.⁶¹

⁵⁶ Documents turned over by 2 IAEA member states reportedly corroborated some of the information about alleged Iranian nuclear weapon and missile warhead design studies contained on a laptop computer passed on to the USA by an Iranian defector. Warrick, J., ‘U.N. alleges nuclear work by Iran’s civilian scientists’, *Washington Post*, 11 Mar. 2008.

⁵⁷ IAEA, Board of Governors, ‘Implementation of the NPT safeguards agreement and relevant provisions of Security Council resolutions 1737 (2006), 1747 (2007) and 1803 (2008) in the Islamic Republic of Iran’, Report by the Director General, GOV/2008/15, 26 May 2008, p. 4.

⁵⁸ IAEA, Communication dated 3 October 2008 received from the Resident Representative of the Islamic Republic of Iran to the Agency concerning the Safeguards Implementation Report for 2007, Information Circular INF/CIRC/739, 9 Oct. 2008. In Aug. 2007 Iran and the IAEA agreed on a work plan which set out the modalities as well as a timeline for resolving 6 outstanding safeguards issues related to the IAEA investigation into Iran’s past nuclear activities. IAEA, Communication dated 27 August 2007 from the Permanent Mission of the Islamic Republic of Iran to the Agency concerning the text of the ‘Understandings of the Islamic Republic of Iran and the IAEA on the modalities of resolution of the outstanding issues’, Information Circular INF/CIRC/711, 27 Aug. 2007. For a description of the work plan see Kile (note 6), pp. 343–45.

⁵⁹ IAEA, GOV/2008/59 (note 33), p. 4.

⁶⁰ IAEA, GOV/2008/59 (note 33), p. 4.

⁶¹ IAEA, GOV/2008/38 (note 54), p. 4.

III. Dismantling North Korea's nuclear programme

In 2008 a series of disputes threatened to derail the action plan for denuclearizing North Korea that had been agreed in February 2007 at the Six-Party Talks between China, Japan, North Korea, the Republic of Korea (ROK, or South Korea), Russia and the USA.⁶² The plan had been hailed as a breakthrough in implementing the joint statement, agreed by the six parties in 2005, on principles guiding future talks aimed at the 'verifiable denuclearization of the Korean Peninsula in a peaceful manner'.⁶³ It had set out an initial sequence of reciprocal steps, based on the principle of 'action for action', intended to pave the way for North Korea to verifiably 'abandon' its nuclear programme.⁶⁴ After a procedural delay, in July 2007 North Korea fulfilled its pledge to shut down and seal, under IAEA supervision, the 5-megawatt-electric (MW(e)) graphite-moderated research reactor, the reprocessing laboratory and the nuclear fuel fabrication plant at its nuclear complex at Yongbyon.⁶⁵

In October 2007 the six parties reaffirmed and clarified the action plan by issuing a statement on 'second-phase actions'. North Korea agreed to disable the nuclear facilities at Yongbyon and to provide a 'complete and correct declaration of all of its nuclear programs' by 31 December 2007.⁶⁶ The other parties promised to provide economic, energy and humanitarian assistance, and in addition the USA pledged to proceed with the process of lifting its financial and trade sanctions against North Korea.⁶⁷ The October 2007 agreement did not specifically address two contentious issues: US allegations that North Korea had pursued an undeclared uranium enrichment programme and that it had provided covert nuclear assistance to other countries, in particular Syria (see section IV below).⁶⁸ In 2002 the USA's accusation that North Korea had a clandestine enrichment programme at an advanced stage of development—a charge from which the US intelligence community subsequently backed away—had led to the collapse

⁶² The Six-Party Talks began in Aug. 2003 as a Chinese diplomatic initiative aimed at resolving the controversy over how to address North Korea's suspected nuclear weapon programme. See Zissis, C. and Bajoria, J., 'The Six-Party Talks on North Korea's nuclear program', Background, US Council on Foreign Relations, 14 Oct. 2008, <<http://www.cfr.org/publication/13593>>.

⁶³ US Department of State, 'Joint statement of the fourth round of the Six-Party Talks Beijing, September 19, 2005', 19 Sep. 2005, <<http://2001-2009.state.gov/r/pa/prs/ps/2005/53490.htm>>.

⁶⁴ Chinese Ministry of Foreign Affairs, 'Initial actions for the implementation of the Joint Statement', 13 Feb. 2007, <<http://www.fmprc.gov.cn/eng/zxxx/t297463.htm>>.

⁶⁵ IAEA, Board of Governors and General Conference, 'Application of safeguards in the Democratic People's Republic of Korea (DPRK)', Report by the Director General, GOV/2007/45-GC(51)/19, 17 Aug. 2007.

⁶⁶ Chinese Ministry of Foreign Affairs, 'Second-phase actions for the implementation of the joint statement', 3 Oct. 2007, <<http://www.fmprc.gov.cn/eng/zxxx/t369084.htm>>.

⁶⁷ Chinese Ministry of Foreign Affairs (note 66).

⁶⁸ US Department of State, 'On-the-record briefing: Assistant Secretary of State for East Asian and Pacific Affairs and Head of the U.S. Delegation to the Six-Party Talks Christopher R. Hill', Remarks, Washington, DC, 3 Oct. 2007, <<http://2001-2009.state.gov/p/eap/rls/rm/2007/93234.htm>>.

of the 1994 North Korean–US Agreed Framework and to North Korea’s formal withdrawal from the NPT the following year.⁶⁹

The year 2008 opened with a dispute between North Korea and the United States over whether the former had complied with the 31 December 2007 deadline for declaring its nuclear programme. North Korea insisted that it had done so, stating that it had ‘worked out a report on the nuclear declaration’ in November 2007 and engaged in ‘sufficient consultation’ about its contents with the USA.⁷⁰ At the same time, North Korea announced that it had slowed the removal of spent fuel rods from the research reactor at Yongbyon—the key remaining step for disabling the reactor—in response to a delay in the promised delivery of heavy fuel oil by the other parties and the USA’s failure to begin lifting its sanctions against North Korea.⁷¹ US officials rejected North Korea’s statement that it had fulfilled its commitments under the October 2007 agreement. The US Assistant Secretary of State for East Asian and Pacific Affairs, Christopher Hill, said that the North Korean Government had not made a ‘complete’ declaration, pointing out that the November 2007 report had failed to address the key issues of uranium enrichment and nuclear assistance to Syria.⁷²

At a meeting in Singapore on 8 April 2008, Hill and Kim Kye-gwan, North Korea’s Vice Foreign Minister and chief nuclear negotiator, reportedly reached a compromise deal in which North Korea would formally declare its plutonium programme, including the amount of plutonium that it had produced.⁷³ It would also complete the disablement of the nuclear facilities at Yongbyon in preparation for their eventual dismantlement. In a confidential side agreement, North Korea indicated that it would ‘acknowledge’ that the USA was concerned that it had an undeclared uranium enrichment programme without commenting on the veracity of those concerns.⁷⁴ The bilateral understanding reached at Singapore paved the way for North Korea to turn over to the USA more than 18 000 pages of documents, dating back to 1986, that recorded the operating history of the

⁶⁹ See Kerr, P., ‘Doubts rise on North Korea’s uranium-enrichment program’, *Arms Control Today*, vol. 37, no. 3 (Apr. 2007). On the breakdown of the Agreed Framework see Kile, S. N., ‘Nuclear arms control, non-proliferation and missile defence’, *SIPRI Yearbook 2003: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2003), pp. 578–92.

⁷⁰ Korean Central News Agency (KCNA), ‘DPRK Foreign Ministry spokesman on issue of implementation of October 3 agreement’, 4 Jan. 2007, <<http://www.kcna.co.jp/item/2008/200801/news01/05.htm>>.

⁷¹ Korean Central News Agency (note 70). In Nov. 2007 North Korean and US experts had worked out a disablement plan that involved 10 separate steps to disable the 3 facilities at Yongbyon. The removal of the spent fuel rods had previously been delayed because of concerns about the safety of the storage pond adjacent to the reactor. See Kile (note 6), pp. 353–55.

⁷² Harden, B., ‘All nuclear efforts disclosed, N. Korea says’, *Washington Post*, 5 Jan. 2008.

⁷³ Sevastopulo, D., ‘US softens demands on North Korea’, *Financial Times*, 14 Apr. 2008.

⁷⁴ Sevastopulo (note 73).

research reactor and associated facilities at Yongbyon.⁷⁵ US experts began the painstaking process of examining the documents as a first step towards reconstructing the history of North Korea's nuclear activities, including its production of plutonium, and comparing this with previous US intelligence assessments.⁷⁶

On 26 June 2008 North Korea delivered to Chinese officials the formal declaration of its nuclear programme. The declaration reportedly centred on North Korea's plutonium production activities. According to press accounts, the country declared that it had an inventory of about 31 kg of separated plutonium.⁷⁷ It did not declare how many nuclear weapons it may have produced, but US officials had previously said that this would 'be determined at a subsequent phase'.⁷⁸ It also did not directly address US concerns about alleged uranium-enrichment activities and possible proliferation assistance to Syria. However, North Korea reportedly acknowledged that the USA was concerned about these allegations in a confidential message issued shortly before the declaration.⁷⁹

On the same day that North Korea delivered its nuclear declaration, US President Bush lifted the sanctions against North Korea imposed under the 1917 Trading with the Enemy Act.⁸⁰ The move cleared the way for additional types of US aid as well as loans from international institutions such as the World Bank. Bush also announced that he would notify the US Congress of his intention to remove North Korea from the USA's list of state sponsors of terrorism in 45 days. In response to criticism that the USA was not forcing North Korea to reveal the full extent of its nuclear activities, the US Secretary of State, Condoleezza Rice, stated that the USA's immediate aim was to get North Korea 'out of the plutonium-making business' since this was 'by far its largest nuclear effort'.⁸¹

The contentious question of how to verify the North Korean declaration was taken up at a meeting of the Six-Party Talks that concluded on 12 July

⁷⁵ US Department of State, 'Update on the Six-Party Talks', Fact sheet, 10 May 2008, <<http://2001-2009.state.gov/r/pa/prs/ps/2008/may/104558.htm>>.

⁷⁶ Strobel, W. P., 'North Korean nuclear documents challenge CIA assertions', McClatchy Newspapers, 28 May 2008, <http://www.mcclatchydc.com/staff/warren_strobel/story/38814.html>.

⁷⁷ Nuclear Threat Initiative (NTI), 'North Korea declares 31 kilograms of plutonium', Global Security Newswire, 24 Oct. 2008, <http://www.nti.org/d.newswire/issues/2008_10_24.html>.

⁷⁸ Hill, C. R., 'Morning walk-through at Six-Party talks', US Department of State, 24 June 2008, <<http://2001-2009.state.gov/p/eap/rls/rm/2008/06/106202.htm>>. For an assessment of North Korea's nuclear weapon inventory and production capability see chapter 8, section X, in this volume.

⁷⁹ Kessler, G., 'Message to U.S. preceded nuclear declaration by North Korea', *Washington Post*, 2 July 2008.

⁸⁰ The White House, 'President Bush discusses North Korea', Transcript, 26 June 2008, <<http://georgewbush-whitehouse.archives.gov/news/releases/2008/06/20080626-9.html>>; Bush, G. W., 'Termination of the exercise of authorities under the Trading with the Enemy Act with respect to North Korea', Proclamation, 26 June 2008, <<http://georgewbush-whitehouse.archives.gov/news/releases/2008/06/20080626-7.html>>; and Trading with the Enemy Act of 1917, 6 Oct. 1917, as subsequently amended, United States Code Title 12, Section 95a.

⁸¹ Rice, C., 'Diplomacy is working on North Korea', *Wall Street Journal*, 26 June 2008.

2008. The parties issued a statement outlining general principles for a verification mechanism that provided for 'visits to facilities, review of documents, interviews with technical personnel and other measures unanimously agreed upon'.⁸² The statement indicated that the IAEA would participate, 'when necessary', in a consultative capacity. The parties established a Working Group on Denuclearization for negotiating specific verification measures. However, the subsequent negotiations were stalled by disagreements between North Korea and the other five parties over the scope of the measures. North Korea rejected proposals that would give outside inspectors considerable access to various aspects of its nuclear programme, including weaponization activities.⁸³ There were also differences between North Korea and the other parties over who should participate in the verification process: in particular, North Korea sought to minimize the role of the IAEA.

The diplomatic situation was complicated by the US Government's insistence that a 'strong verification regime' had to be put in place before it would remove North Korea from the list of state sponsors of terrorism.⁸⁴ According to a press report, in the summer of 2008 US officials submitted to their North Korean counterparts a draft protocol which provided for highly intrusive inspections.⁸⁵ The proposed inspections could potentially take place in all parts of North Korea and required 'full access to any site, facility or location' deemed relevant to the nuclear programme, including military facilities, regardless of whether the sites were contained in the North Korean declaration. The US proposal also required 'full access to all materials' at sites that might have had a nuclear purpose in the past; investigators would be able to make repeated visits to the sites to collect and remove samples. The sweeping inspection provisions contained in the US draft protocol had reportedly created deep divisions among US officials. Some portrayed it as a key test of North Korean intentions while others warned that the intrusive provisions would be unacceptable to North Korea.

The USA's actions elicited a harsh response from North Korea that threatened to unravel the denuclearization deal. On 26 August 2008 the North Korean Foreign Ministry issued a statement asserting that in 'no agreements reached among the six parties' or between North Korea and

⁸² Chinese Ministry of Foreign Affairs, 'Press communiqué of the heads of delegation meeting of the sixth round of the Six-Party Talks', 12 July 2008, <<http://www.fmprc.gov.cn/eng/zxxx/t456096.htm>>.

⁸³ Crail, P., 'Verification dispute stalls NK nuclear talks', *Arms Control Today*, vol. 38, no. 7 (Sep. 2008).

⁸⁴ Kellerhals, M. D., 'North Korea must provide a verification plan, U.S. officials say', *America.gov*, US Department of State, 12 Aug. 2008 <<http://www.america.gov/st/peacesec-english/2008/August/20080812122740dmslahrellek0.5498316.html>>.

⁸⁵ Kessler, G., 'Far-reaching U.S. plan impaired N. Korea deal', *Washington Post*, 26 Sep. 2008.

the USA was there any stipulation that verifying the nuclear declaration was a condition for North Korea's removal from the US sanctions list.⁸⁶ The statement rejected the US linkage of the two issues as being an attempt to 'pressurize' North Korea to 'accept such inspection as scouring any place of the DPRK as it pleases to collect samples and measure them'.⁸⁷ The statement also rejected the proposed verification measures as an unacceptable infringement of the country's sovereignty. It announced that, in light of the USA's demands, North Korea had suspended work on completing the disablement of the nuclear facilities at Yongbyon. At the end of September 2008, the IAEA announced that North Korea had barred its inspectors from the radiochemical laboratory and asked that the IAEA's seals and surveillance be removed from the site in preparation for restarting plutonium reprocessing activity there.⁸⁸

The prospect of the imminent breakdown of the denuclearization deal led to a burst of Chinese-mediated diplomatic activity aimed at salvaging it. On 11 October 2008 the USA announced that it had provisionally removed North Korea from the list of state sponsors of terrorism, in the expectation that North Korea would resume disablement activities and agree to a robust verification mechanism.⁸⁹ North Korea confirmed that an understanding had been reached with the USA on the verification dispute. In response to the USA's delisting decision, it resumed the disablement of the nuclear facilities at Yongbyon and permitted the return of IAEA inspectors.⁹⁰

The apparent breakthrough was short-lived: North Korea and the USA subsequently presented conflicting versions of what had been agreed in the Chinese-brokered deal. According to a US State Department summary, it included several elements that would 'allow the Parties to reliably verify North Korea's denuclearization'.⁹¹ These included two key provisions: agreement on the use of scientific procedures, including sampling and forensic activities; and agreement that inspectors would have access to undeclared sites in North Korea 'based on mutual consent' (rather than 'upon request', as originally proposed by the USA). The US summary noted

⁸⁶ Korean Central News Agency (KCNA), 'Foreign Ministry's spokesman on DPRK's decision to suspend activities to disable nuclear facilities', 26 Aug. 2008, <<http://www.kcna.co.jp/item/2008/200808/news08/27.htm>>.

⁸⁷ Korean Central News Agency (note 86).

⁸⁸ IAEA, 'IAEA removes seals from plant in Yongbyon', Press Release 2008/13, 24 Sep. 2008, <<http://www.iaea.org/NewsCenter/PressReleases/2008/prn200813.html>>.

⁸⁹ Kessler, G., 'U.S. drops North Korea from terrorism list', *Washington Post*, 12 Oct. 2008; and US Department of State, 'U.S.–DPRK agreement on denuclearization verification measures', Press statement, 11 Oct. 2008, <<http://2001-2009.state.gov/r/pa/prs/ps/2008/oct/110922.htm>>.

⁹⁰ Korean Central News Agency (KCNA), 'Foreign Ministry spokesman on DPRK's will to cooperate in verification of objects of nuclear disablement', 12 Oct. 2008, <<http://www.kcna.co.jp/item/2008/200810/news13/20081013-1214ee.html>>.

⁹¹ US Department of State, 'U.S.–North Korea understandings on verification', Fact sheet, 11 Oct. 2008, <<http://2001-2009.state.gov/r/pa/prs/ps/2008/oct/110924.htm>>.

that these provisions would apply in verifying North Korea's plutonium programme as well as in addressing concerns about its suspected uranium enrichment and proliferation activities.

The following month, a North Korean Foreign Ministry statement contradicted the US interpretation of the deal. It asserted that 'some forces' were 'floating misinformation' in an attempt to win concessions on the verification issue.⁹² It said that North Korea had in fact stipulated that any inspections by US or other experts must be confined to the declared sites at Yongbyon. North Korea would allow inspectors to visit the sites, 'confirm' documents and interview technicians but would not permit the 'collection of samples, etc'.⁹³ The statement also announced that North Korea was again slowing the removal of spent fuel from the reactor at Yongbyon in response to 'the delayed fulfillment of the economic compensation' by the other parties.

The year closed with the fate of the denuclearization deal in limbo. A meeting of the Six-Party Talks ended on 11 December 2008 without any resolution of the verification dispute.⁹⁴ According to Christopher Hill, North Korea was 'not ready really to reach a verification protocol with all the standards that are required'. He added that the USA would accordingly have to 're-think' its approach.⁹⁵ Hill and other US officials emphasized that North Korea's decision to bar inspectors from taking environmental samples was particularly problematic, since such sampling was considered to be crucial for determining the scope of North Korea's nuclear weapon programme and whether there were any undeclared nuclear activities in the country.⁹⁶

IV. Controversy over an alleged nuclear facility in Syria

In 2008 there continued to be controversy over Israeli and US allegations that Syria had been constructing, with technical assistance from North Korea, an undeclared nuclear reactor. This reactor was said to be similar to the 5-MW(e) graphite-moderated reactor that North Korea had used to

⁹² Korean Central News Agency (KCNA), 'Foreign Ministry spokesman holds some forces accountable for delayed implementation of agreement', 13 Nov. 2008 <<http://www.kcna.co.jp/item/2008/200811/news13/20081113-18ee.html>>.

⁹³ A senior US State Department official reportedly acknowledged that 'no written, audio or video evidence exists of North Korea's commitment to allow sampling at its nuclear sites'. Kravlev, N., 'U.S. takes N. Korea's word on nukes pact', *Washington Times*, 24 Nov. 2008.

⁹⁴ Associated Press, 'NKorea nuclear talks fail to break deadlock', *International Herald Tribune*, 12 Dec. 2008.

⁹⁵ 'US to "rethink" N Korea strategy', BBC News, 11 Dec. 2008, <<http://news.bbc.co.uk/2/7778105.stm>>.

⁹⁶ For a discussion of the role, and limits, of environmental sampling and other nuclear forensics techniques in the verification process in North Korea see Acton, J., 'Definitely, maybe: verifying North Korean denuclearisation', *Jane's Intelligence Review*, vol. 20, no. 8 (Aug. 2008).

produce plutonium for a nuclear explosive device. The construction site, which was located in the desert at al-Kibar near the Euphrates River, was destroyed by an Israeli air strike on 6 September 2007.⁹⁷ The controversy complicated the Six-Party Talks and raised new questions about purported links between North Korea and Syria in 'secondary proliferation' activities (i.e. the onward transfer of nuclear technology or material from one proliferator to another). At the same time, it raised international concern about the normative viability of the treaty- and inspection-based non-proliferation regime. The IAEA Director General criticized Israel and the United States for pursuing pre-emptive military action instead of turning over to the IAEA their evidence of Syria's alleged undeclared nuclear activities for investigation.⁹⁸

In April 2008 US intelligence officials publicly presented some of the evidence, including detailed photographic images and three-dimensional models, on which they had based their conclusion that the al-Kibar site was a nuclear reactor under construction and was likely to be 'not intended for peaceful purposes'.⁹⁹ Among other considerations, the reactor did not appear to be 'configured to produce electricity and was ill-suited for research'.¹⁰⁰ In addition, Syrian engineers had allegedly made considerable efforts to conceal the site's true purpose, including camouflaging the distinctive physical profile of the reactor, hiding its water cooling systems and eliminating other telltale indicators of a reactor construction project.¹⁰¹ US intelligence officials stated that the reactor was 'nearing operational capability' but had been destroyed before being loaded with nuclear fuel. At the same time, they acknowledged that they had only 'low confidence' that the site was part of a clandestine nuclear weapon programme, since Syria did not possess a reprocessing facility or any of the other infrastructure needed for such a programme.¹⁰² Some observers criticized key elements of the US presentation as being circumstantial or otherwise unconvincing, in particular its conclusion about covert North Korean–Syrian nuclear cooperation.¹⁰³

⁹⁷ 'Israel admits air strike on Syria', BBC News, 2 Oct. 2007, <<http://news.bbc.co.uk/2/7024287.stm>>.

⁹⁸ Melman, Y., 'IAEA slams Israel for bombing alleged nuclear reactor in Syria', *Haaretz*, 25 Apr. 2008.

⁹⁹ The White House, 'Statement by the Press Secretary', 24 Apr. 2008, <<http://georgewbush-whitehouse.archives.gov/news/releases/2008/04/20080424-14.html>>.

¹⁰⁰ US Office of the Director of National Intelligence, 'Background briefing with senior U.S. officials on Syria's covert nuclear reactor and North Korea's involvement', 24 Apr. 2008, <<http://www.dni.gov/interviews.htm>>.

¹⁰¹ Albright, D. and Brannan, P., 'The Al Kibar reactor: extraordinary camouflage, troubling implications', Institute for Science and International Security (ISIS) Report, 12 May 2008, <<http://www.isis-online.org/publications/syria/>>.

¹⁰² US Office of the Director of National Intelligence (note 100).

¹⁰³ Sevastopulo, D. and Dombey, D., 'Doubts raised over strength of US intelligence', *Financial Times*, 25 Apr. 2008.

On 23 June 2008 IAEA inspectors visited the al-Kibar site following lengthy discussions with Syria. Based on satellite images of the site taken between 2001 and 2007, the IAEA had determined that the size and layout of the 'box-shaped building' destroyed in the air strike was consistent with those of a nuclear reactor of the type referred to in the US allegations.¹⁰⁴ The IAEA inquiry was complicated by the 'large scale clearing and levelling operations' that took place at the site shortly after the air strike and the removal of the debris to an undisclosed location.¹⁰⁵ Syria granted inspectors unrestricted access to the site but failed to respond to their requests for documentation concerning the past uses of the structures once located there. It also declined to give inspectors permission to visit three other locations inside the country 'alleged by some [IAEA] Member States to be of relevance' to activities at al-Kibar.¹⁰⁶

In a November 2008 report to the IAEA Board, ElBaradei stated that environmental samples taken at the al-Kibar site had revealed 'a significant number' of chemically processed natural uranium particles.¹⁰⁷ Syria told the IAEA that the only explanation for the presence of such particles was that they came from the missiles used to destroy the building.¹⁰⁸ ElBaradei's report also stated that the discovery of the uranium particles was not sufficient evidence of undeclared nuclear activity and that their presence could have resulted from 'many different scenarios'.¹⁰⁹ The question of where the particles originated was a crucial one: the uranium was in a form which must be reported by Syria to the IAEA under Syria's safeguards agreement;¹¹⁰ and its presence was grounds for the IAEA to challenge Syria's compliance with the agreement.¹¹¹ One non-governmental expert, citing an unnamed source close to the IAEA, speculated that the particles

¹⁰⁴ IAEA, Board of Governors, 'Implementation of the NPT safeguards agreement in the Syrian Arab Republic', Report by the Director General, GOV/2008/60, 19 Nov. 2008, p. 3. The IAEA's findings contradicted Syria's assertion that the building could not have been a nuclear reactor because the site lacked the electricity and water supplies needed for such a facility.

¹⁰⁵ IAEA, GOV/2008/60 (note 104), p. 4. Satellite imagery showed that Syria had conducted 'landscaping activities and the removal of large containers' from the 3 locations shortly after the IAEA requested access to them.

¹⁰⁶ IAEA, GOV/2008/60 (note 104), p. 1.

¹⁰⁷ IAEA, GOV/2008/60 (note 104), p. 3.

¹⁰⁸ IAEA, GOV/2008/60 (note 104), p. 3.

¹⁰⁹ Reuters, 'Syria: uranium traces inconclusive, head of U.N. atomic agency says', *New York Times*, 17 Nov. 2008.

¹¹⁰ Agreement between the Government of the Syrian Arab Republic and the International Atomic Energy Agency for the application of safeguards in connection with the Treaty on the Non-proliferation of Nuclear Weapons, signed on 25 Feb. 1992, entered into force on 18 May 1992, reproduced in IAEA Information Circular INFCIRC/407, July 1992.

¹¹¹ Hibbs, M., 'Some governors want IAEA to address Syria reactor allegations', *Nuclear Fuel*, vol. 33, no. 17 (25 Aug. 2008), p. 5. There were also questions about whether Syria had violated its updated Code 3.1 subsidiary safeguards agreement, which required it to submit to the IAEA a design information questionnaire (DIQ) at the time of the decision to build a nuclear facility.

came from nuclear fuel secretly imported by Syria from North Korea.¹¹² Other sources indicated that it would be possible for international inspectors to use forensics techniques in order to determine whether the natural uranium had originated in North Korea but that this would require North Korea to give them access to processing equipment, operating records and material samples.¹¹³

ElBaradei criticized Syria's lack of cooperation in facilitating the IAEA's assessment work, in particular for not allowing inspectors to visit the requested sites and not making available all relevant documentation. However, he stopped short of requesting the IAEA Board to authorize the agency to conduct a special safeguards inspection in Syria.¹¹⁴ ElBaradei also urged the Board not to terminate the IAEA's technical cooperation programme with Syria, arguing that there was no legal basis for curbing Syria's IAEA membership rights based on unverified accusations.¹¹⁵ On 27 November 2008 the IAEA Board approved a technical aid package to help Syria develop a civilian nuclear power programme, reportedly over the initial opposition of Australia, Canada, France, the UK and the USA.¹¹⁶

V. Russian–US strategic nuclear arms control

In 2008 there was renewed high-level attention in the Russian Federation and the United States to the future of strategic nuclear arms control. On 6 April, at the end of a summit meeting in Sochi, Bulgaria, Russian President Vladimir Putin and US President Bush issued a declaration setting out a framework for strategic cooperation. Among other elements, the declaration reiterated the two sides' intention to carry out further reductions in their nuclear arsenals and called for a new legally binding arms reduction agreement to succeed the 1991 START Treaty.¹¹⁷ The treaty, which entered into force on 5 December 1994, has a 15-year duration and hence is set to expire at the end of 2009.

The fate of the START Treaty has become an increasingly urgent issue because its verification regime is the primary means by which Russia and

¹¹² Acton, J., 'Norks may have shipped Syria U fuel', *Arms Control Wonk*, 21 Nov. 2008, <<http://www.armscontrolwonk.com/2106/new-evidence-of-nork-syria-link>>.

¹¹³ Hibbs, M., 'DPRK has not shown inclination to provide access on Syria', *Nuclear Fuel*, vol. 34, no. 1 (12 Jan. 2009).

¹¹⁴ For a discussion of the IAEA's legal basis for requesting a special inspection see Persbo, A., 'There is no need for evidence, buddy', *Verification, Implementation and Compliance*, 9 Oct. 2008, <<http://verificationthoughts.blogspot.com/2008/10/there-is-no-need-for-evidence-buddy.html>>.

¹¹⁵ Heinrich, M., 'IAEA chief, West clash over nuclear aid for Syria', *Reuters*, 24 Nov. 2008, <<http://www.reuters.com/article/worldNews/idUSTRE4AN5BB20081124?rpc=401&>>.

¹¹⁶ Associated Press, 'IAEA approves technical aid to Syria', *World Nuclear News*, 27 Nov. 2008, <http://www.world-nuclear-news.org/IT-IAEA_approves_technical_aid_to_Syria-2711087.html>.

¹¹⁷ The White House, 'U.S.–Russia strategic framework declaration', Fact sheet, 6 Apr. 2008, <<http://georgewbush-whitehouse.archives.gov/news/releases/2008/04/20080406-5.html>>.

the USA monitor each other's strategic nuclear forces. This includes verifying the implementation of the additional nuclear force reductions mandated by the 2002 Strategic Offensive Reductions Treaty (SORT), which lacks its own verification provisions.¹¹⁸ The START verification regime includes 12 types of on-site inspection as well as continuous monitoring activities, data exchanges and notifications regarding the parties' strategic nuclear forces and facilities.¹¹⁹ Some arms control advocates have pointed out that, if these arrangements were no longer to be observed, the strategic forces of Russia and the USA would become much less transparent to one another. This in turn would raise the risk of their respective nuclear force planning being driven by worst-case scenarios.¹²⁰

There has been little interest in either Moscow or Washington in extending the duration of the START Treaty in its current form. Both Russian and US officials have said that the treaty's complex cold war-era verification provisions and reporting requirements have become unduly burdensome and should be reduced. However, both sides have reaffirmed the value of the principle of cooperative monitoring underlying the START verification regime and have stated that a streamlined version of the regime should be incorporated in a follow-on arms reduction agreement.¹²¹

In July 2007 Russia and the USA initiated talks on a new bilateral agreement to succeed START. The two sides met periodically over the following year, but the frequency of contact was reduced in the autumn of 2008, when the USA postponed several scheduled meetings in protest at Russia's military incursion into Georgia.¹²² As 2008 ended, the two sides had made little progress on bridging their differences over the basic provisions and undertakings to be codified in the agreement.

Russia called for a new legally binding arrangement that would be more similar in content to START than to SORT. It would mandate further reductions in warhead inventories, including non-deployed warheads, as well as limits on strategic nuclear delivery vehicles (intercontinental ballistic missiles, ICBMs; submarine-launched ballistic missiles, SLBMs; and long-range bombers).¹²³ Russian officials have emphasized that any new

¹¹⁸ For a summary and other details of SORT (also called the Moscow Treaty) see annex A in this volume.

¹¹⁹ US Department of State, 'START: verification', 29 July 1991, <<http://www.state.gov/www/global/arms/factsheets/wmd/nuclear/start1/strtveri.html>>.

¹²⁰ Kimball, D. G., 'Jump-STARTing U.S.-Russian disarmament', *Arms Control Today*, vol. 38, no. 9 (Nov. 2008).

¹²¹ Arbatov, A. and Gottemoeller, R., 'New presidents, new agreements? Advancing U.S.-Russian strategic arms control', *Arms Control Today*, vol. 38, no. 6 (July/Aug. 2008).

¹²² Sokov, N., 'U.S and Russia set to begin talks to replace START I Treaty', *WMD Insights*, no. 18 (Sep. 2007); and Meyer, J., 'Risks seen for U.S. as it freezes out Russia', *Los Angeles Times*, 22 Sep. 2008. On the Georgia-Russia conflict see chapter 2, section V, in this volume.

¹²³ 'Lavrov says any new nuclear pact with U.S must lower WMD limits', RIA Novosti, 28 Nov. 2007, <<http://en.rian.ru/russia/20071128/89926549.html>>. On Russia's and the USA's current

accord must preserve in principle a numerical parity between the two sides' deployed strategic nuclear forces. At the same time, it must effectively constrain the USA's advantage over Russia in 'upload potential' (i.e. the ability to rapidly redeploy nuclear warheads held in storage onto strategic nuclear delivery vehicles). The latter concern derived from the Russian view that a major shortcoming of SORT was that it did not make the mandated force reductions irreversible by requiring the parties to verifiably eliminate the warheads withdrawn from deployment. Russia also wanted future limits to apply to ICBMs and SLBMs that might be armed with conventional munitions instead of nuclear payloads as part of the USA's Global Strike initiative.¹²⁴

In contrast, the Bush Administration made clear that it preferred a more modest agreement. This would extend the SORT limits on operationally deployed warheads at approximately the current level without imposing new limits on delivery vehicles that might require a restructuring of the US nuclear force posture.¹²⁵ In addition, US officials suggested that any accompanying verification and monitoring arrangements for a new agreement should be politically rather than legally binding.¹²⁶ These preferences were consistent with the Bush Administration's generally sceptical approach to arms control, in which maintaining US flexibility to meet changing security conditions was a paramount concern. However, there were indications that the incoming administration of US President Barack Obama would take a different approach. During the 2008 presidential election campaign, Obama wrote that he wanted to work with Russia to 'make deep cuts in global nuclear stockpiles' by January 2013 and to 'extend [the] essential monitoring and verification provisions of START I prior to its expiration'.¹²⁷

In addition to Russian-US differences over the outline of a post-START agreement, there were a number of other broader disputes in Russian-US relations that complicated making progress in strategic nuclear arms control. Foremost among these was the planned US deployment of missile defence interceptors and radar at sites in Poland and the Czech Republic.¹²⁸

inventories of warheads, both deployed and non-deployed, see chapter 8, sections II and III, in this volume.

¹²⁴ Sokov, N., 'Russia weighing U.S. plan to put non-nuclear warheads on long-range missiles', *WMD Insights*, no. 6 (June 2006).

¹²⁵ Arbatov and Gottemoeller (note 121).

¹²⁶ Giacomo, C., 'U.S. to let START nuclear treaty expire', Reuters, 22 May 2007, <<http://www.reuters.com/article/topNews/idUSN2242996020070522>>.

¹²⁷ Quoted in 'Arms Control Today 2008 presidential Q&A: President-elect Barack Obama', *Arms Control Today*, vol. 38, no. 10 (Dec. 2008).

¹²⁸ On 8 July 2008 the Czech Foreign Minister, Karel Schwarzenberg, and the US Secretary of State, Condoleezza Rice, signed an agreement allowing the deployment of a US X-band missile tracking radar at a site in the Czech Republic. 'US and Czechs sign defence deal', BBC News, 8 July 2008, <<http://news.bbc.co.uk/2/7494996.stm>>. On 20 Aug. 2008, Rice and the Polish Foreign Minister, Radek Sikorski, signed an agreement allowing the deployment of 10 interceptor missiles at

Russia insisted that the USA must first address Russia's concerns about the implications of the deployments for its strategic nuclear deterrent before a new nuclear arms reduction agreement could be reached. There also continued to be political fallout from the Georgia–Russia conflict. This affected Russian–US cooperation in a number of areas, including civil nuclear technology.¹²⁹

In the absence of agreement on a START replacement, on 17 November 2008 the five parties to the START Treaty (Belarus, Kazakhstan, Russia, Ukraine and the USA) met in Geneva to consider whether to extend its duration: the treaty gives the parties the option of doing so for successive five-year periods.¹³⁰ They took no decision but pledged to continue to consider the issue. According to US legal experts, the fact that the parties held the meeting by 5 December 2008—more than one year before START was set to expire—kept open the possibility of extending the treaty later in 2009.¹³¹

VI. Developments related to multilateral treaties and initiatives

The NPT Preparatory Committee

The second meeting of the Preparatory Committee for the 2010 Review Conference of the Non-Proliferation Treaty took place on 28 April–9 May 2008 in Geneva.¹³² The meeting was attended by 106 states parties to the NPT under the chairmanship of Volodymyr Yel'chenko of Ukraine.¹³³

a site in Poland. 'US and Poland seal missile deal', BBC News, 20 Aug. 2008, <<http://news.bbc.co.uk/2/7571660.stm>>. Neither agreement had been ratified by the end of 2008.

¹²⁹ In Sep. 2008, as a protest against Russia's action in Georgia, the Bush Administration announced that it would withdraw from US Congressional consideration the Russian–US '123 agreement' (after Section 123 of the US Atomic Energy Act of 1954) that would have paved the way for the USA to begin nuclear commerce with Russia. Fleming, S., 'Bush administration freezes Russia nuclear pact', Reuters, 8 Sep. 2008, <<http://www.reuters.com/article/latestCrisis/idUSN08454314>>.

¹³⁰ US Department of State, 'Statement by the United States Representative to the Joint Compliance and Inspection Commission for the Strategic Arms Reduction Treaty', Fact sheet, 17 Nov. 2008, <<http://2001-2009.state.gov/t/vci/rls/prsr/2008/112284.htm>>.

¹³¹ McNutt, T., 'Re-START: legal options to extend a nuclear verification regime', Lawyers Alliance for World Security, 30 July 2007, <<http://www.cdi.org/laws/ReStartMcNutt.html>>. The treaty specifies that 'No later than one year before the expiration of the 15-year period, the Parties shall meet to consider whether this Treaty will be extended.' START Treaty (note 3), Article XVII.

¹³² In order to strengthen the treaty's review process, the 1995 NPT Review and Extension Conference decided that future Preparatory Committee meetings be held in each of the 3 years leading up to the 5-yearly review conferences. The purpose of the meetings is to 'consider principles, objectives and ways in order to promote the full implementation of the Treaty, as well as its universality, and to make recommendations thereon to the Review Conference'. 'Strengthening the review process for the treaty', New York, 11 May 1995, NPT/CONF.1995/32 (Part I), reproduced in *SIPRI Yearbook 1996: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 1996), pp. 590–91.

¹³³ Meier, O., 'NPT meet buoys hopes for 2010 conference', *Arms Control Today*, vol. 38, no. 5 (June 2008), pp. 35–37. See also the meeting website, <<http://www.un.org/NPT2010/SecondSession/>>.

The generally constructive tone of the meeting marked a significant change from the procedural disputes that paralysed the 2007 Preparatory Committee meeting. The chairman prepared a factual summary of the meeting's deliberations, covering issues related to the three main pillars of the NPT (nuclear energy, nuclear disarmament and non-proliferation) as well as reporting on organizational and funding decisions for the 2009 Preparatory Committee meeting. However, the parties failed to agree to attach the summary to the formal report of the conference, reportedly because of criticism from Iran that the summary's coverage of the substantive discussions at the meeting was unbalanced.¹³⁴

Resurgent interest in nuclear disarmament

In 2008 there were signs of a further resurgence of interest in nuclear disarmament. One of the main catalysts was the publication in 2007 of an editorial by former senior US officials or legislators—Henry Kissinger, George Schultz, William Perry and Sam Nunn (collectively dubbed 'the wise men')—calling for a nuclear weapon-free world and outlining, in general terms, how to achieve this.¹³⁵ The four renewed their call for a nuclear weapon-free world in a second editorial, published in January 2008, which urged Russia and the USA to immediately take several steps to reduce nuclear weapon-related dangers through nuclear disarmament and non-proliferation.¹³⁶ This initiative was echoed in June 2008 in a widely publicized editorial written by four former British secretaries of state for defence and foreign affairs—Douglas Hurd, Malcolm Rifkind, David Owen and George Robertson.¹³⁷ The British statesmen emphasized that they, like their US counterparts, were not urging unilateral nuclear disarmament but were calling instead for a renewed commitment in Europe to work towards dramatically reducing nuclear weapon inventories and their salience in national security strategies. In January 2009 four prominent retired German politicians—former Chancellor Helmut Schmidt, former President Richard von Weizsäcker, former minister Egon Bahr and former foreign minister Hans-Dietrich Genscher—supported calls for action by Russia and the USA to promote nuclear disarmament. Among other steps, they recommended that the USA withdraw its non-strategic nuclear weapons from Germany.¹³⁸

¹³⁴ Johnson, R., 'The 2008 NPT PrepCom: good meeting, but was it relevant?', *Disarmament Diplomacy*, no. 88 (summer 2008).

¹³⁵ Schulz, G. et al., 'A world free of nuclear weapons', *Wall Street Journal*, 4 Jan. 2007.

¹³⁶ Schulz, G. et al., 'Toward a nuclear-free world', *Wall Street Journal*, 15 Jan. 2008.

¹³⁷ Hurd, D. et al., 'Start worrying and learn to ditch the bomb', *The Times*, 30 June 2008.

¹³⁸ Schmidt, H. et al., 'Toward a nuclear-weapon-free world: a German view', *International Herald Tribune*, 9 Jan. 2009.

The re-emergence of nuclear disarmament as a topic for mainstream public debate helped to spur the launching of several new initiatives by national governments, some in conjunction with leading non-governmental organizations (NGOs), to promote progress towards nuclear disarmament.¹³⁹ In June 2008 the prime ministers of Australia and Japan announced that their countries had agreed to launch a bilateral initiative for ‘high-level expert dialogue on nuclear disarmament and non-proliferation’—the International Commission on Nuclear Non-proliferation and Disarmament.¹⁴⁰ The purpose of the new commission was to reinvigorate the global nuclear disarmament efforts and to strengthen the NPT ‘by seeking to shape a global consensus in the lead up to the 2010 NPT Review Conference’.¹⁴¹ In December 2008, 100 international political, military, business and civic leaders met in Paris to launch a non-partisan political initiative, called Global Zero, aimed at developing a step-by-step plan to eliminate nuclear weapons globally by a designated date.¹⁴² The initiative emphasizes the importance of establishing a Russian–US partnership to promote disarmament.

Nuclear safety and security initiatives

At a July 2008 summit meeting at Toyako, Hokkaido, Japan, the heads of government of the Group of Eight (G8) leading industrialized countries—Canada, France, Germany, Italy, Japan, Russia, the UK and the USA—issued a report on the Global Partnership against the Proliferation of Weapons and Materials of Mass Destruction.¹⁴³ The report noted that Global Partnership-funded projects to build chemical weapon destruction facilities in Russia had made significant progress in destroying the coun-

¹³⁹ See Gill, B., ‘A call to arms control’, *SIPRI Yearbook 2008* (note 6).

¹⁴⁰ Japanese Ministry of Foreign Affairs, ‘Joint statement by Prime Minister Yasuo Fukuda of Japan and Prime Minister Kevin Rudd of Australia on “Comprehensive strategic, security and economic partnership”’, 12 June 2008, <<http://www.mofa.go.jp/region/asia-paci/australia/joint0806.html>>.

¹⁴¹ Australian Department of the Prime Minister and Cabinet, ‘International Commission on Nuclear Non-proliferation and Disarmament’, Media release, 9 July 2008, <http://www.pm.gov.au/media/release/2008/media_release_0352.cfm>. See also the International Commission on Nuclear Non-proliferation and Disarmament website, <<http://www.icnnd.org/>>.

¹⁴² Global Zero, ‘100 international leaders launch Global Zero campaign to eliminate nuclear weapons’, Press release, 9 Dec. 2008 <<http://www.globalzero.org/press-release/>>.

¹⁴³ G8 Hokkaido Toyako Summit 2008, ‘Report on the G8 Global Partnership’, 8 July 2008, <<http://www.mofa.go.jp/policy/economy/summit/2008/doc/>>. The Global Partnership was established at the 2002 G8 Summit in Kananaskis, Canada, to support cooperative projects, initially in Russia, aimed at addressing non-proliferation, disarmament, counterterrorism and nuclear safety issues. The partner countries pledged to provide up to \$20 billion for such efforts over 10 years, with half of the money coming from the USA. G8 Kananaskis Summit 2002, ‘The G8 Global Partnership against the Spread of Weapons and Materials of Mass Destruction’, 27 June 2002, <http://www.canadainternational.gc.ca/g8/summit-sommet/2002/index.aspx?menu_id=15>.

try's nearly 40 000 tonnes of declared chemical weapons.¹⁴⁴ There had also been substantial progress made in dismantling decommissioned Russian nuclear-powered submarines. This includes the construction of storage facilities for naval reactor components, spent nuclear fuel and radioactive waste. The report set benchmarks for completing these and other programme activities in Russia by the end of 2012.¹⁴⁵ In addition, it noted that the Global Partnership countries were continuing discussions on expanding their non-proliferation activities, moving from a focus on the former Soviet Union to a more global approach.

On 16–18 June 2008 the fourth plenary meeting of the 73 partners of the Global Initiative to Combat Nuclear Terrorism (GICNT) was held in Madrid, Spain.¹⁴⁶ The main goal of the GICNT, which was established as a Russian–US initiative at the 2006 G8 summit meeting in St Petersburg, Russia, is to 'prevent the acquisition, transport, or use by terrorists of nuclear materials and radioactive substances or improvised explosive devices using such materials, as well as hostile actions against nuclear facilities'.¹⁴⁷ The Madrid meeting addressed three general sets of issues: strengthening nuclear detection and forensics; denying terrorists financing and safe havens; and deterring terrorists from acquiring or using nuclear devices and materials. Although no new initiatives were announced at the meeting, the participants supported expanding the number of partner states, especially in Africa and the Middle East.

VII. Conclusions

In 2008 the controversies over the nuclear programmes of Iran, North Korea and Syria highlighted weaknesses in the 1968 Non-Proliferation Treaty and the broader non-proliferation regime. The main issue was not whether particular treaties and regulatory arrangements had failed. Rather, it was how to deal with states which were suspected or known to have deliberately violated their obligations under the NPT and the norms underlying them. North Korea resisted international pressure to permit robust

¹⁴⁴ For more on the destruction of chemical weapons in Russia see chapter 10, section IV, in this volume.

¹⁴⁵ Under the Global Partnership initiative, the G8 has been supporting bilateral and multilateral cooperation projects in Russia and Ukraine focused on 5 major areas: (a) the dismantlement of nuclear submarines in Russia's north-west and far east; (b) the destruction of chemical weapons; (c) the disposition of fissile materials; (d) the employment of former weapons scientists; and (e) the physical protection of nuclear materials.

¹⁴⁶ US Department of State, Bureau of International Security and Nonproliferation, 'Fourth meeting of the Global Initiative, Madrid', 17 June 2008, <<http://2001-2009.state.gov/t/isn/rls/fs/106194.htm>>.

¹⁴⁷ G8 Saint Petersburg Summit 2006, 'Joint statement by U.S. President George Bush and Russian Federation President V. V. Putin announcing the global initiative to combat nuclear terrorism', 15 July 2006, <<http://en.g8russia.ru/docs/5.html>>.

verification of its declared and suspected nuclear activities. Iran's continued defiance—with relative impunity—of the UN Security Council's legally binding demands that it suspend its uranium enrichment programme fuelled doubts about the ability or will of the Security Council to act effectively in its role as the ultimate enforcer of the NPT. Israel's decision to launch a pre-emptive air strike against a suspected undeclared reactor site in Syria pointed to an erosion of the confidence of some governments in using diplomatic means to address activities of proliferation concern.

Developments in 2008 also highlighted a need to strengthen existing non-proliferation instruments. In particular, the impasse in the IAEA's ongoing investigation of alleged nuclear weapon-related studies carried out by Iran led to renewed calls to expand the IAEA's legal authority or statutory mandate to investigate cases in which a state is suspected of engaging in secret nuclear weapon-related work, even when there was no safeguarded nuclear material directly involved.

At the same time, there were signs of a renewed interest in nuclear disarmament. This was evident in the launching of several new initiatives by national governments, some in conjunction with leading NGOs, to promote progress towards nuclear disarmament. Many observers noted that the re-emergence of a serious debate about disarmament had enhanced the prospects for a successful 2010 NPT Review Conference.