

**DEALING WITH IRAN'S
NUCLEAR PROGRAM**

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DEALING WITH IRAN'S NUCLEAR PROGRAM

EXECUTIVE SUMMARY AND RECOMMENDATIONS

The announcement on 21 October 2003 of an agreement between Iran on the one hand and Britain, France and Germany on the other, is an important and welcome step in resolving the controversy surrounding Tehran's nuclear program. But it would be wrong to assume that it ends it. The challenge now is to use the breathing space provided by the agreement to tackle the questions – about its implementation, the future of Iran's uranium enrichment activities and Iran's own security concerns – that, for the time being, it has deferred.

The evidence of Iran's putative military program is mixed but disturbing, and by no means to the U.S. alone. Both the International Atomic Energy Agency (IAEA) and European countries that have maintained close ties to Tehran have echoed Washington's views. Iran did not disclose the existence of several nuclear facilities. When it finally did declare these facilities, it under-declared, downplaying what turned out to be extensive and sophisticated plants. It failed to report the importation from China of natural uranium over ten years ago. Most disturbing, there are indications that it introduced enriched uranium into a nuclear site without first notifying the IAEA.

Concerns about Iran's capacity are matched by concerns about its intentions. While none of the above actions necessarily is a violation of Iran's obligations, and while all would be consistent with a purely peaceful enterprise, Tehran's pattern of behaviour is cause for unease. In many instances, Iran simply failed to explain its actions. When it did, those explanations were inconsistent or shifting. The IAEA has documented examples of lack of cooperation and candour. Iranian officials have placed hurdles in the path of nuclear inspectors and, in some cases, denied access. Its economic justifications for developing a nuclear energy

program, while not implausible, are not fully convincing either.

Tension over Iran's nuclear program is further aggravated by deeply-entrenched mistrust between Tehran and Washington. The U.S., alarmed at Iran's support for groups engaged in terrorist acts and hostility to the Arab-Israeli peace process and persuaded that it is determined to develop a bomb, has grave reservations about allowing Tehran to develop any nuclear program at all. Iran believes it has a right to a peaceful nuclear program and is determined to be treated fairly as a member in good standing of the Nuclear Non-Proliferation Treaty (NPT). Powerful circles within the country, concerned about increasing encirclement by hostile or potentially hostile countries, fearful that the U.S. intends to change its regime by force, and deeply marked by the experience of its war with Iraq, when Iran was virtually abandoned by the international community, do not appear willing to forsake the possibility of a military nuclear program. Prospects for a durable deal on the nuclear issue are complicated by divisions within the U.S. administration and the Iranian regime alike that hinder clear-cut decision-making.

Ultimately, the nuclear problem will remain an issue of contention between Washington and Tehran at least until they are in a position to strike a grand bargain that addresses their wider and more fundamental dispute. But it would be foolhardy to bank on such an outcome, and in particular on the remote possibility of a change in regime in Iran.¹ A nuclear-armed Iran could encourage similar efforts by neighbours, from Egypt to Turkey and Saudi

¹ See ICG Middle East Briefing, *Iran: Discontent and Disarray*, 15 October 2003.

Arabia, and deal a deadly blow to the entire NPT regime. The combination of a bomb and Iran's newly developed longer-range missile, the *Shahab-3*, could be perceived by Israel as a threat necessitating a military response. Conversely, a U.S. or Israeli preemptive strike to forestall development of a bomb could provoke deadly retaliation by Tehran in a variety of asymmetric or non-conventional ways. Moreover, should such a strike not wholly wipe out the program (as is likely), Tehran would remain with a wounded capacity to develop a bomb and a greatly enhanced determination to do so.

For these reasons, the initiative of the three EU countries should be embraced by the international community, including the U.S. On paper, the 21 October agreement signals Iran's acceptance of the IAEA's core demands. According to the joint statement it issued with the three EU foreign ministers, Iran will answer all the IAEA's outstanding questions and clarify remaining gaps, discrepancies or inconsistencies in its previous explanations; sign the NPT's Additional Protocol and commence ratification procedures; and suspend all uranium enrichment and processing activities.

Iran's positive decision will avoid a collision with the international community and referral of the matter to the United Nations Security Council in the short run. It shows that Europe's policy coupling pressure and engagement can produce results. But in order for the agreement to be more than a short-lived reprieve, it needs to be vigorously followed up and strengthened through the following:

- *Immediate and unconditional implementation by Iran of the steps to which it has agreed.* Iran will be judged on deeds, not on words. That means, in particular, quickly providing the full transparency it promised and ensuring accelerated ratification and implementation of the Additional Protocol.
- *Indefinite suspension of all uranium enrichment by Iran or, at a minimum, its resumption only under rigorous and intrusive international monitoring.* Iran's decision to suspend all uranium enrichment is a very important element of the 21 October deal. But it also is the most fragile. Iran made clear both before and after the agreement that it reserves the right to enrich uranium and has pointedly refused to specify how long its suspension would last. This issue needs to be nailed down lest it unravel the entire

agreement. Ideally, Iran's peaceful nuclear program would not include indigenous enrichment, but if Iran is otherwise in compliance with NPT, including Additional Protocol, requirements, it will be difficult to make that case. The key is to remain focused on the ultimate goal: preventing Iran from possessing an unfettered capacity to produce weapons-grade uranium. At a minimum, therefore, Iran should state that while it reserves its right to enrich uranium, it will not exercise that right without agreeing to measures – such as intrusive, permanent international monitoring and perhaps joint Iranian/international management of its enrichment facilities – beyond those demanded by the NPT and Additional Protocol.

- *Pending establishment of a solid track record of transparent behaviour, a halt by Iran of any effort to build a heavy water reactor and a pledge not to put any such reactor into operation without reaching agreement with the international community on appropriate arrangements.* While there is nothing in the NPT that requires such a step, there is much in Iran's heretofore evasive behaviour that warrants it. Absent the requisite confidence that Iran is not developing a nuclear weapons program, a decision to proceed with its declared intent to build a heavy water reactor would have to be strongly resisted by the international community.

If Iran responds satisfactorily, along the lines indicated, the international community should respect its right to develop a peaceful nuclear program and provide it with the necessary technology and materials. It would be helpful at the same time to develop a set of confidence-building measures – such as a U.S. commitment not to use force against Iran and the establishment of a regional security forum – to reassure Iran about its own security concerns and to encourage it to become a fully participating, responsible international player. In all these respects it will be important to develop and maintain a strong international consensus, in particular between the U.S., EU and Russia, which will require adjustments in the positions of all parties.

RECOMMENDATIONS

To Iran:

1. Immediately and unconditionally implement the terms of the 21 October 2003 agreement,

including by putting forward a concrete timetable for implementation.

2. Agree to intrusive, unrestricted onsite international monitoring of all nuclear sites and research centres.
3. Pledge that should it decide to exercise its right to resume its uranium enrichment activities, it will do so only after agreeing to appropriate further arrangements such as permanent onsite international monitoring, possibly involving joint Iranian/international management of the sites.
4. Halt any effort to build a heavy water reactor and pledge that any such reactor will not be put into operation until such time as agreement has been reached with the international community on appropriate further onsite monitoring or joint Iranian/international management arrangements.
5. Commit not to deploy existing *Shahab-3* missiles within range of Israel, i.e., north or west of the city of Yazd, and to an immediate moratorium on construction of further *Shahab-3* missiles and on research, development, construction and/or importation of any other missile with a range exceeding 320 kilometres (200 miles).

To the United States:

6. Assuming Iran implements the above recommendations relating to its nuclear program:
 - (a) refrain from interfering with the import by Iran of nuclear technologies and materials for civilian purposes, as permitted under the NPT; and
 - (b) commit not to threaten or use force against Iran
7. Seek to reengage Iran on issues of common concern, including the situation in Iraq and in Afghanistan.

To the European Union:

8. Make progress on negotiations for the Trade and Cooperation Agreement and all subsequent economic and commercial agreements with Iran conditional on its full compliance with the undertakings respecting its nuclear program outlined above and include in all forthcoming agreements with Iran a stipulation that such rights and privileges as

may be granted will be immediately revoked should Iran hinder the IAEA's work or take steps toward acquiring a nuclear weapon.

9. Assuming Iran implements the above recommendations relating to its nuclear program, provide Iran with appropriate modern nuclear technologies and materials for civilian purposes;

To all Gulf states and other states with special interests in the security of the Gulf:

10. Initiate preparations bilaterally and multilaterally for the convening of a Gulf regional security forum that might be held under the aegis of the UN, as a means of addressing sources of concern, in particular by:
 - (a) concluding an arms control agreement to regulate military size and capabilities of Iran, the sovereign government of Iraq (once it has been established), and other Gulf states, including controls on the numbers, payload capacity and range of Iraqi and Iranian missile forces;
 - (b) establishing a confidence building measures regime between the parties to that agreement; and
 - (c) holding out the prospect of participation by Israel, at such time as peace agreements have been reached with the Palestinians, Syria and Lebanon, with the goal of incorporating Israel into the regional security arrangements and working toward the goal of establishing a zone free from weapons of mass destruction.

To Russia and China:

11. Enforce full compliance with the provisions of the NPT and the Missile Technology Control Regime by institutes, universities, state entities, government agencies and private corporations, and, in cases of violations of agreements by these entities, effectively sanction violators.
12. Assist international efforts to ensure transparency of Iran's nuclear program, including by giving international inspectors access to individuals and other entities involved in selling relevant technologies and goods to Iran.

To Russia:

13. Ensure expeditious return by Iran of all spent Russian-supplied fuel rods, in accordance with their bilateral agreement.

To the United Nations and NPT member states:

14. Take immediate steps to review and modify the IAEA regime to enhance its capacity to identify, publicise and prevent the acquisition of nuclear weapons, including, inter alia, by:
 - (a) expanding the permanent international staff of professional inspectors and analysts to develop expertise on the nuclear programs of individual states as well as on strategies employed to deceive international inspections;
 - (b) maintaining accurate and up to date lists of companies and individuals identified as illicitly aiding in WMD proliferation;
 - (c) accelerating the speed with which the IAEA can identify problem states and refer cases to the Security Council for possible action; and

- (d) identifying the specific sanctions to be applied to states that engage in nuclear proliferation.

To members of the United Nations:

15. Acknowledge that the international community's response to Iraq's behaviour during the Iran-Iraq war was inadequate by, inter alia:
 - (a) providing financial and technical aid to assist the victims of illnesses and infirmities provoked by Iraq's chemical attacks; and
 - (b) supporting Iraqi and international efforts to investigate and, where appropriate, bring war crimes charges against members of the former government responsible for the use of chemical weapons.

Amman/Brussels, 27 October 2003

DEALING WITH IRAN'S NUCLEAR PROGRAM

I. INTRODUCTION

On 8 September 2003, Director General Mohammed El-Baradei submitted a report to a special meeting of the International Atomic Energy Agency (IAEA)² in Vienna. This was the latest development in an ongoing crisis that gained new urgency in August 2002 when an Iranian exile group, the National Council of Resistance of Iran (a front group for the *Mojahedin-e Khalq*)³ publicly presented evidence of two nuclear facilities in Iran that had not been declared to the IAEA. After Iran formally declared them, IAEA inspections in February 2003 determined that the plants – a facility for uranium enrichment at Natanz, and one for heavy water production at Arak – were larger, more sophisticated and much closer to completion than previously assumed. While Iran's efforts to purchase nuclear technology abroad had been well known for years, it was readily apparent that it had made far more progress than had generally been supposed.

These revelations, and a 9 February 2003 speech by President Khatami stating that Iran had the capability to enrich uranium and had developed a large infrastructure of mines and uranium processing facilities, raised disturbing questions. The following day, the head of the Iranian Atomic Energy Organisation explained that Iran would soon have the capability to manufacture uranium oxide, uranium hexafluoride and uranium metal.

The international media focused heavily on the newly discovered facilities and their impressive

sophistication and advanced state. However, it is the undeclared import a decade earlier of uranium fluoride compounds – a form of uranium used in enrichment plants and subject to IAEA safeguards – together with the finding in mid-2003 of enriched uranium at Natanz and the Kalaye Electrical Company that caused real concern, particularly when juxtaposed with Iran's lack of full cooperation and openness with the IAEA.

In its 12 September 2003 resolution, the IAEA Board demanded that Iran provide complete information about its nuclear program and grant the agency unrestricted access by 31 October 2003. Driven by concerns over its behaviour, the Board went beyond the requirements of the NPT and requested that Iran “promptly and unconditionally sign, ratify and fully implement” the Additional Protocol to the NPT, which – in an effort to come to grips with the danger of covert proliferation – creates a short-notice inspection process, opens non-declared facilities to inspection and requires member states to report on research and development programs relating to nuclear fuel cycles.⁴ It also requested, “as a confidence-building measure”, that Iran immediately “act in accordance with” that Additional Protocol. Finally, and until it has provided satisfactory responses to outstanding questions and applied the provisions of the Additional Protocol, the IAEA Board called on Iran “to suspend all further uranium enrichment-related activities . . . and . . . any reprocessing activities”.⁵

On 21 October 2003, following meetings with the foreign ministers of Britain, France and Germany, Iran provided a positive response. According to the

² See Appendix B for an account of the role of the IAEA and the safeguards regime it operates under the Nuclear Non-Proliferation Treaty.

³ The *Mojahedin-e Khalq* (People's Holy Warriors, or MKO) is an opposition group based in Iraq. See ICG Briefing, *Iran: Discontent and Disarray*, op. cit., pp. 9-10.

⁴ R. Stone, “Iran's Nuclear Program: Another Middle East Showdown”, *Science*, Vol. 300, N°5626, 13 June 2003, pp. 1642-1644, available at www.sciencemag.org/cgi/content/full/300/5626/1642?ck=nck.

⁵ IAEA Board Resolution, 12 September 2003.

joint statement issued by the Iranian government and the three EU ministers, Iran agreed to:

- ❑ cooperate fully with the IAEA and respond to all outstanding issues;
- ❑ sign the Additional Protocol, begin ratification procedures and cooperate with the IAEA “in accordance with the protocol in advance of its ratification”; and
- ❑ suspend all uranium enrichment and processing activities.

In return, the European foreign ministers recognised Iran's right to develop nuclear energy for peaceful purposes and asserted that, “once international concerns...are fully resolved, Iran could expect easier access to modern technology and supplies in a range of areas”. They also pledged to “cooperate with Iran to promote security and stability in the region, including the establishment of a zone free from weapons of mass destruction”.⁶

On 23 October 2003, Iran took a first step toward implementing the agreement by delivering to the IAEA a declaration (which it said was comprehensive) of its nuclear activities. Iranian officials conceded that they had been “discreet”, explaining this behaviour by “the sanctions that have been imposed on Iran for the past 25 years”.⁷

The agreement is an encouraging development, and has been welcomed as such by the international community, including the United States.⁸ But it would be wrong to assume that it will close the matter. Beyond the immediate question of whether Iran will promptly live up to its commitments – and of how the Additional Protocol will be implemented – lie deeper issues dividing Washington and Tehran in particular. The U.S. has signalled it expects Iran basically to end its nuclear program, and certainly to abandon any effort to develop a full range of nuclear energy producing capabilities. Iran has stated flatly it will not. If the 21 October 2003 agreement is to prove more than a temporary reprieve, and if escalation is to be averted, efforts now must focus on addressing all sides' longer-term concerns.

This report describes Iran's programs and reviews the evidence concerning its nuclear capacity and intent. It also examines the motivations and interests of Iran, the U.S. and other members of the international community. It discusses possible ways of building on Iran's apparent agreement to comply with the IAEA's demands in order to achieve a more sustainable arrangement while reviewing possible policy options in the event the current agreement breaks down.

⁶ “Iran Declaration,” available at http://news.bbc.co.uk/1/hi/world/middle_east/3211036.

⁷ Ali Akbar Salehi, Iran's ambassador to the IAEA, quoted in Reuters, 23 October 2003.

⁸ President Bush called it “a very positive development”, Reuters, 22 October 2003.

II. IRAN'S NUCLEAR PROGRAM

A. ASSESSING CAPACITY

1. The Scope of the nuclear program

Background. Iran's nuclear program, motivated by "a fusion of Iranian national ambition and concern for the direction of the neighbourhood",⁹ began in the 1960s during the reign of Shah Reza Pahlavi when the U.S. was the country's principal supplier of nuclear technology and research assistance.¹⁰ In 1974, Iran entered into a commercial agreement with France for the purchase of enriched uranium. After the 1979 revolution that ousted the Shah, and following a legal controversy, French authorities promised the U.S. that no enriched uranium would be transferred to Iran from French nuclear facilities.¹¹

In September 1989, Iran announced the discovery of uranium deposits near the town of Saghand, in the eastern province of Yazd, and at several other sites. Domestic production was to begin in 1990. An IAEA inspection team visiting Saghand in February 1992 saw uranium mining equipment but no evidence of processing; nonetheless, Iran's 1989-1994 five-year plan included funding to construct a "uranium bullion" plant. Iran also entered into a U.S.\$18 million contract with Argentina for construction of the plant. As a result of U.S. pressure, Argentina halted its assistance by the end of 1991; U.S. officials suspect that China subsequently may have completed the facility and constructed a uranium hexafluoride manufacturing plant at Fasa. Several Iranian officials also paid visits to nuclear facilities in the successor republics of the former Soviet Union, raising suspicion that they may have attempted to buy quantities of enriched uranium.¹²

⁹ Geoffrey Kemp, "How to Stop the Iranian Bomb", *The National Interest*, Summer 2003, p. 50.

¹⁰ The U.S. provided Iran with a small research reactor, which is housed at the Tehran Research Centre and remains in use to this day. The U.S. also supplied Iran with "hot cells" – heavily shielded rooms with mechanical arms used to separate irradiated material from the research reactor.

¹¹ David Albright, "Nuclear Proliferation: Spotlight Shifts to Iran", *Bulletin of the Atomic Scientists*, March 1992.

¹² In 1992, Iranian officials visited the Ulba Metallurgical Plant in Kazakhstan, which produces reactor fuel. The plant had an inventory of more than 600 kilograms of highly-enriched uranium. The U.S. purchased the entire stockpile in late 1994 and moved it to the U.S. in a joint operation

The centrepiece of Iran's nuclear program involved construction of the Bushehr nuclear plant on the south-western coast. The project began with West German help in the early 1970s but was halted as a result of the 1979 revolution. The partially constructed facility was severely damaged by Iraqi air strikes during the 1980-1988 war, and Germany subsequently refused to complete the contract.¹³ Russia stepped in, and the Bushehr facility is now scheduled for completion in 2005 as a light water reactor under the terms of an U.S.\$800 million contract.¹⁴ That contract also called for the training of Iranian scientists and technicians at Russian nuclear facilities, the development of a nuclear mine in Iran, the construction of a gas centrifuge plant for uranium enrichment and the supply of enriched uranium fuel for Bushehr itself. Under U.S. pressure, President Yeltsin announced in 1995 that Russia would not supply the centrifuge facility.¹⁵

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between the Department of Energy's Oak Ridge National Laboratory and the military code-named Project Sapphire. David Albright, "An Iranian Bomb?", *Bulletin of the Atomic Scientists*, January 1995.

¹³ David Albright, "An Iranian Bomb?", op. cit. There is some uncertainty about how much damage the Iraqi strike actually inflicted. See G.J. Gerardi and M. Aharinejad, "Report: An Assessment of Iran's Nuclear Facilities", *The Nonproliferation Review*, Spring-Summer 1995, fn. 7.

¹⁴ *The Washington Post*, 29 July 2002; a U.S.\$1 billion contract for a second reactor at Bushehr is pending but has not been awarded to any contractor. Bushehr's original completion date of 19 March 2004 has been extended. See "Bushehr", at <http://www.globalsecurity.org/wmd/world/iran/bushehr.htm>. The 2005 completion date is the latest of several such deadlines but there are grounds for doubting that Bushehr will be ready for startup as scheduled. The project has suffered repeated delays due to management difficulties and problems in combining the original West German-built facilities with the Russian-designed components now being supplied. ICG interview with Western intelligence official, 29 August 2003. When the Russian-Iranian contract for Bushehr was signed in January 1995, Russian officials estimated that it would take five years to finish the reactor. David Albright, "An Iranian Bomb?" op. cit.

¹⁵ David Albright, "An Iranian Bomb?", op. cit.

TECHNICAL ISSUES IN THE IRAN DEBATE:

BASIC NUCLEAR JARGON NON-SPECIALISTS NEED TO KNOW

A. NUCLEAR MATERIALS

Uranium

Uranium occurs naturally. To be useable, uranium ore (containing as little as 0.1 per cent uranium) has to be *mined*, then *milled* to produce a uranium oxide concentrate ('yellowcake') and refined into uranium dioxide. This can be used as fuel in some reactors (see "heavy water reactors" below), but for most purposes uranium dioxide has to then be *converted* into uranium hexafluoride gas (UF₆) and then *enriched* to either reactor-grade or weapons-grade levels. The final step in the process is the fabrication of fuel rods (ceramic uranium oxide pellets encased in metal tubes).

'Enrichment' means increasing the concentration of the isotope uranium 235, and reducing that of uranium 238. Natural uranium consists primarily of these two atomic forms (which have the same number of protons, but differing numbers of neutrons in each nucleus): only U-235 is capable of undergoing *fission*, the process by which a neutron strikes a nucleus, splitting it into fragments and releasing heat and radiation.

Low-enriched uranium, used as the fuel (to heat water to steam to drive turbines) in most power generating reactors, involves increasing the natural concentration of U-235 (0.7 per cent) to between 3 and 5 per cent.

Highly-enriched uranium (HEU) is defined (for safeguards administration purposes) as that in which the percentage of U-235 has been increased to greater than 20 per cent. *Weapons-grade uranium* is usually described as that enriched to 93 per cent or higher U-235.

Plutonium

Plutonium occurs naturally only in minute proportions and is essentially a man-made element.

Reactor-grade plutonium is produced by commercial power reactors as a normal by-product when some of the neutrons released during fissioning interact with other uranium atoms: some of this is itself fissioned, but a proportion remains in *spent fuel rods* in different isotopic forms (including Pu-239, Pu-240 and Pu-241), which when extracted is used as a nuclear fuel. In the case of standard *light-water reactors*, the plutonium contained in these is typically about 60-70 per cent Pu-239; *heavy-water reactors*, by contrast, can produce Pu-239 in weapons-grade concentrations (but the brief irradiation required to achieve this is inefficient for power production).

B. NUCLEAR PROCESSES

Enrichment

These are of four main types:

(1) Gas centrifuge (Iran's pilot facility at Natanz): UF₆ gas is pumped into a series of rotating cylinders: the centrifugal force draws heavier molecules (containing U-238) toward the outside of the chamber while lighter U-235 molecules remain in the centre. Standard centrifuge enrichment is easily modified to produce HEU, and the modifications can be concealed.

(2) Gaseous Diffusion: A mixture of gases containing U-235 and U-238 are placed in a semi-permeable vessel. Since lighter molecules travel faster than heavier ones, molecules consisting of U-235 will escape from the vessel faster than those of U-238.

(3) Electromagnetic enrichment: The different paths of the U-235 and U-238 isotopes as they pass through a magnetic field allow them to be separated and collected.

(4) Laser: A laser of a particular wavelength is used to excite U-235 atoms to the point that they can be separated from U-238.

Reactors

These days are of two main types:

(1) Light water reactors (Iran's Bushehr plant, being built with Russian help): The most common reactors in operation today, light water reactors use ordinary water as a coolant and require low-enriched uranium as fuel. From a proliferation standpoint, light water reactors are preferable to heavy water reactors for two reasons: first, extracting the plutonium by-product requires shutting down the reactor (easily noticed); secondly, the plutonium produced as a by-product contains significant impurities, i.e. low concentrations of Pu-239.

(2) Heavy water reactors (Iran has a heavy water producing plant at Arak and has declared its intention to build a heavy water reactor there): These reactors use as a coolant water containing an elevated concentration of "heavy hydrogen" (also known as deuterium) - hydrogen atoms which contain a neutron in their nucleus in addition to the usual proton. This allows the use of natural (non-enriched) uranium as fuel. Heavy water reactors produce – without the need for any uranium enrichment facilities – significant quantities of plutonium, and are capable (though not in commercial use mode) of producing Pu-239 in weapons-grade concentration.

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Recent disclosures. Beginning in 2002, previously unknown information concerning the scope of the nuclear program came to light. This involved sophisticated nuclear facilities and the importation of uranium fluoride compounds used in enrichment facilities and their transfer for further processing.

Undisclosed imports. It was the undeclared importation of nuclear material more than ten years prior that put Iran in technical violation of its NPT obligations. On 26 February 2003, Iran confirmed in a letter to the IAEA that in 1991 it had imported from China quantities of processed uranium but it claimed that the uranium had not been used in any enrichment process.¹⁶ Nonetheless, during a March 2003 visit, IAEA inspectors noticed that one cylinder of processed uranium was 1.9 kilograms lighter than its declared weight. Iranian officials responded that the missing uranium had escaped due to faulty valves on the cylinder and that the leak had not been noticed until 2002.

Unreported or under-reported facilities. After an Iranian opposition group in exile had revealed the presence of several new, previously undisclosed nuclear facilities, Iran confirmed that it was building a large gas centrifuge uranium enrichment facility near Natanz and that it had completed a heavy water production plant near Arak. Iran also declared its intention to build a heavy water reactor at Arak, a uranium metal conversion facility, a uranium conversion centre at Isfahan (declared in 2000) and a fuel manufacturing plant, also at Isfahan, to be commissioned in 2006 and begin operation in 2007.

The scale of the newly-declared infrastructure is impressive. The Natanz facility in particular includes a pilot plant intended to hold 1,100 centrifuges, to be completed by the end of 2003; during his inspection of the facility in February 2003, IAEA Director General El-Baradei saw 164 centrifuges and components for 1000 more.¹⁷ Natanz also

encompasses a larger commercial-scale facility meant to hold as many as 50,000 centrifuges, although this will not receive nuclear material in the near future. This facility was to begin operations in 2005, after completion of the centrifuge design tests in the pilot facility. Iran stated that its centrifuge design program had been conducted using inert gases, models and computer simulation, but no nuclear materials.¹⁸ However, environmental testing in mid-2003 that revealed the presence of enriched uranium at Natanz and the Kalaye Electrical Company caused considerable concern.

The plant at Arak is intended to produce up to 100 tons of heavy water per year, an amount greatly exceeding the requirements of Iran's medical and chemical industries.¹⁹ In its February 2003 declarations to the IAEA, Iran also stated that it was preparing to mine uranium ore near Saghand, had produced yellowcake at a facility near the city of Yazd and had completed uranium processing plants at Isfahan²⁰ – all of which gives a sense of the range of the country's capabilities.

2. Missiles and other delivery systems

Missiles. Iran began to develop the ability to manufacture a variety of missile systems under the Shah. Efforts have focused on solid-fuelled rockets, a SCUD duplication program, a cruise missile program and, most recently, a revived intermediate-range ballistic missile (IRBM) program known as the *Shahab* ("Meteor" or "Shooting Star") series. The *Shahab* program, a source of great concern to Israel and the U.S., began in the mid-1990s as an effort to develop domestically a missile with strategic capability – that is, the range to reach beyond Iran's immediate Gulf neighbours.

Iran has had mixed success. It has developed the ability to manufacture short-range solid-fuelled rockets, and it has become a leading producer of artillery rockets with ranges between 40 and 200

¹⁶ IAEA, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran", GOV/2003/40, 19 June 2003, p. 2.

¹⁷ "Latest Developments in the Nuclear Program of Iran, In Particular on the Plutonium Way", Presentation by France to the Nuclear Suppliers Group (NSG), May 2003 Plenary, Pusan, South Korea, p. 2. El-Baradei also noted the plant had been built deep underground and possessed unusually thick concrete walls; these precautions suggest a desire to armour the facility against air strikes.

¹⁸ Generally, centrifuge designs are tested using gaseous UF₆. In such cases, the introduction of the gas to the facility should be preceded by a declaration to the IAEA.

¹⁹ "Latest Developments in the Nuclear Program of Iran", pp. 3-4. The French report points out that in February 2003 the head of the Iranian Atomic Energy Organisation had assured the French Ambassador to Iran that his country would not be pursuing a heavy water reactor, but he subsequently told the IAEA that it would build such a reactor at Arak.

²⁰ Ibid., p. 2.

kilometres.²¹ As a result of technology transfers from North Korea in 1985 (the middle of its war with Iraq), Iran was able to manufacture SCUD-B missiles, which have a range of 230 to 310 kilometres and can carry a payload of up to 1,000 kilograms. However, this stockpile appears to have remained relatively static since the early 1990s.²² Beginning in 1990, Iran also purchased at least 60 longer-range SCUD-C missiles from North Korea with a range of up to 500 kilometres, but a smaller payload of up to 700 kilograms.²³

The *Shahab-3* reportedly is capable of carrying a 700 to 1,000 kilogram warhead over roughly 1,300 kilometres (800 miles), which would give Iran for the first time the ability to strike any region in Israel.²⁴ It appears to have been developed with Russian assistance.²⁵ The missile achieved uneven results

during testing (the first test flight in July 1998 failed, but those on 15 July 2000 and 23 May 2002 were successful).²⁶ On 4 July 2000, the Iranian Revolutionary Guards Corps announced the formation of five new missile units that were to be equipped with the *Shahab-3* and, on 7 July 2003 Iranian officials confirmed that the *Shahab-3* had completed final testing and would go into production.

Iran is also working on the *Shahab-4*, a much larger missile with an expected range of up to 2,000 kilometres (1,250 miles) and a payload of up to 1,360 kilograms. According to a representative of the National Council of Resistance of Iran – the opposition group that first publicly revealed proof of the existence of the Natanz enrichment plant and the Arak heavy water manufacturing plant – what was reported as a test of the *Shahab-3* on 23 May 2002 in fact was a successful flight test of the *Shahab-4*. Iran has characterised the missile as a space launch vehicle; if equipped with performance enhancements, it potentially could reach parts of Italy, Germany, Poland, the Czech Republic, Hungary and Greece.²⁷

Aircraft. Iran has a limited number of manned aircraft that would be capable of delivering nuclear weapons. While there are many drawbacks should Iran elect to use an aircraft as a delivery system – chiefly the risk of interception by missiles or defensive aircraft from the target state – there are also advantages, notably that aircraft can carry a much heavier payload than Iran's missiles. Aircraft delivery also puts far less stress on the weapon; delivery by missile subjects the payload to considerable buffeting and other stresses.

Of the more than 200 F-4D Phantom fighter/attack aircraft the U.S. provided the Shah, perhaps fewer than 30 are still in working order. U.S. sanctions have undermined Iran's ability to maintain them, forcing its air force to resort to extensive cannibalisation of some aircraft to keep others operational.²⁸ Iran also purchased SU-24 strike

²¹ A. Karp, "Lessons of Iranian Missile Programs for U.S. Nonproliferation Policy", *The Nonproliferation Review*, Spring-Summer 1998, p. 19.

²² Karp estimates Iran's holdings of SCUD-B missiles at 210; Israeli sources place the number at 250 to 300. Iran is also believed to possess between six and fifteen TEL – Transporter-Erector-Launcher – vehicles, which are required in order to fire the SCUDs. Cordesman, *Weapons of Mass Destruction in the Middle East* (Washington, D.C., 1998), p. 60. Iran refers to its SCUD-Bs and the longer-range SCUD-Cs as *Shahab-1* and *Shahab-2*. M. Eisenstadt, "The Armed Forces of the Islamic Republic of Iran: An Assessment", *Middle East Review of International Affairs*, Vol. 5, N°1, March 2001, p. 11.

²³ Cordesman, op. cit., pp. 60-61. Some sources claim Iran may have purchased as many as 170 SCUD-Cs. *Nuclear Threat Initiative*, 21 January 2003.

²⁴ Karp, op. cit., p. 20. The missile's range might be extendable to approximately 940 miles/1240 kilometres by limiting the weight of the payload. Cordesman, op. cit., p. 64. For technical details and history of the *Shahab-3* development program, see Federation of American Scientists. Military Analysis Network. "Shahab-3/Zelzal-3", available at <http://www.fas.org/nuke/guide/iran/missile/shahab-3.htm>. See also *The Jerusalem Post*, 8 July 2003.

²⁵ *The Washington Post*, 31 December 1997. Russia's attitude towards Iranian efforts to acquire ballistic missile technologies has been inconsistent. Russia is a signatory to the Missile Technology Control Regime (MTCR) and on at least one occasion has expelled an Iranian diplomat seeking to buy missile designs. "Russia Expels Iranian", *BMD Monitor*, Vol. 12, N°24, 28 November 1997. However, Russian companies continue to be identified as prominent suppliers of missile technologies to Iran and other states, in spite of pledges by Presidents Yeltsin and Putin to stop such activity. Opinion is divided as to whether the Russian authorities are acting in bad faith or the problem is symptomatic of a general erosion of government authority and monitoring capability. Karp, op. cit., pp. 23-25.

²⁶ K. Katzman, "Iran: Current Developments and U.S. Policy", Issue Brief for Congress, Washington, D.C., Congressional Research Service, updated 25 April 2003, pp. 2-3.

²⁷ If the report is accurate, it would indicate very rapid progress on the *Shahab-4*. U.S. defence officials downplayed the report, pointing to Iran's problems deploying the *Shahab-3*. See J. Donnelly, "Iran Completes Testing of New Ballistic Missile, Group Says", *Space & Missile*, 24 October 2002.

²⁸ "Iran – Air Force", www.globalsecurity.org/military/world/iran/airforce.htm.

aircraft and MiG-29 fighter-interceptor aircraft from Russia, although integration of these into its force has proved difficult.

3. How far is Iran from being able to produce a nuclear bomb?

Given the considerable uncertainties surrounding the nuclear program and the inadequacy of foreign intelligence (illustrated in different ways by the cases of Iraq and North Korea), it is virtually impossible to provide a reliable estimate of the time that Iran would need to manufacture a nuclear weapon if that is its intent. Iran's failure to declare several installations to the IAEA and its resistance to full transparency suggest that some elements in the program may remain hidden.

Once Iran has completed the infrastructure necessary for a full range of capabilities – from the mining of raw uranium ore to the processing of yellowcake into the various grades of enriched uranium fuel – it probably would be able to produce a nuclear weapon within two years, assuming such an effort was made a priority and the work of designing and building the non-nuclear components of a bomb had been done in advance. Depending on bomb design selected, this would be more or less straightforward.

The real problem in the program, in other words, is Tehran's efforts to develop an indigenous fuel-processing capability, which would give it the capacity to create highly enriched uranium necessary for construction of a bomb. Determining the origins of the enriched uranium found at the Natanz and Kalaye facilities is, in this respect, critical. If it was generated within Iran, it would indicate that Iran has mastered the technology of enriching uranium and will – once it has completed facilities such as the one at Natanz – be in a position to generate essentially unlimited quantities of enriched uranium of whatever grade (reactor-grade or weapons-grade) desired. Likewise, if and when a heavy water reactor at Arak is completed, Iran would be able to generate unlimited quantities of plutonium, and the only constraint on the size of its stockpile of nuclear material would be the rate of production of enriched uranium and plutonium. Significantly, Iran could do all the above within the boundaries of the NPT treaty by declaring its facilities and its production to the IAEA.

In contrast, the Bushehr facility does not employ technology that could be easily used to manufacture

a nuclear device; U.S. focus on this issue – complicated by Russia's involvement – therefore appears misplaced. Collection of plutonium from the spent fuel for the Bushehr light water reactors is complicated by the light water reactor design, which would require the plant to be shut down before the fuel could be collected, a step that is very difficult to conceal. Moreover, reactor-grade plutonium is difficult to manipulate for military purposes; no weapons program has been known to rely on it. Still, since it is technically feasible, a state that holds stocks of spent fuel can be considered to have the material necessary to build a bomb.²⁹ Pursuant to the 1995 agreement, Russia would sell fuel for Iran's reactors and take back spent fuel for reprocessing and storage. Hence, Iran is forbidden from diverting the fuel and seeking to extract plutonium; should it do so, it would be vulnerable to inspection and discovery by the IAEA under the NPT.

Based on the available, albeit highly unreliable, information, observers and intelligence officials estimate that Iran could be in a position to develop a nuclear weapon within two to four years at the low end, roughly ten years at the high end.

B. ASSESSING INTENT

Iran unquestionably is developing an extensive nuclear program. For policy-makers, the issue is whether it intends to channel this program for military purposes. The question can be broken down into three components: whether there is any legitimate non-military rationale for an Iranian nuclear program; whether any aspect of that program points strongly to military application; and whether there is any innocent explanation for Iran's evasive behaviour vis-à-vis the IAEA.

1. Does Iran have a legitimate, non-military justification for its nuclear program?

Observers prone to question the peacefulness of Iranian intentions point to the country's vast oil and gas resources, which, in their view, negate the need

²⁹ Ibid., p.123, fn. 4; p. 133, box 4-B. In 1977 the U.S. revealed that in 1962 it had built and detonated a bomb constructed from material taken from a reactor. See also Richard Garwin, "Reactor-Grade Plutonium Can be Used to Make Powerful and Reliable Nuclear Weapons", 26 August 1998, New York, Council on Foreign Relations, available at <http://www.fas.org/rlg/980826-pu.htm>.

or economic rationale for a nuclear program. Iran holds 90 billion barrels of proven oil reserves, roughly 9 per cent of the world's total; it also has the second-largest natural gas reserves in the world. In response, Iran argues that its decision to build nuclear power stations is economically sound. While Iran currently consumes a significant share of its indigenous production of natural gas, it has of late been seeking to take advantage of growing international demand to increase foreign exchange earnings. By building nuclear power plants to supply its domestic market, increasingly valuable natural gas would be freed for export.

Iran's argument is not implausible. Although generating nuclear power traditionally requires high up-front capital expenditures, in the long run it often ends up being significantly cheaper than producing electricity through gas-fired plants.³⁰ Indeed, Iran is hardly the only energy-rich country to have invested in a nuclear program.³¹

The argument's validity is highly sensitive to assumptions about, *inter alia*, the comparative costs of construction and operation of the nuclear plants and of alternative forms of power generation.³² Several of these factors are essentially unknowable, and it is indeed possible that desire to develop a balanced industrial base could have led to the decision to invest in a robust nuclear industrial capacity.

Still, there is reason to question Iran's claim on economic grounds. Other means of reducing domestic consumption of natural gas, oil and petroleum products exist that are both less expensive and less controversial than nuclear energy. For example, Iran could invest the funds currently spent on nuclear technology to upgrade its domestic power system and build new gas-fired power plants to diminish the amount of gas wasted as a result of flaring (burning).³³ It also could reduce subsidies to domestic consumers of oil, refined petroleum products (such as gasoline and diesel fuel) and gas. This would

lessen consumption, encourage greater efficiency and result in substantial savings in energy and budget.³⁴

More generally, U.S. officials claim that funds being invested in Iran's nuclear program exceed by a considerable margin the value of the power that the Bushehr reactor in particular will be able to generate, and that investment of a fraction of these funds into the domestic power sector to enable it to use the abundant supplies of natural gas would generate far more power for the country. They also note that, as indicated above, the heavy water plant at Arak – which Iran justified by the needs of its chemical and medical sectors – is intended to produce an amount greatly exceeding apparent annual requirements in those areas and would give the capacity to produce very large quantities of plutonium.³⁵

Of course, even a weak economic rationale would not prove a military purpose. Nuclear power exercises an attraction on many countries not least as a potent symbol of national pride and a guarantor of self-reliance. Iran, which considers itself a regional power, may well feel that possession of nuclear energy is a key to being regarded and treated as such.

2. Is there anything in the scope or variety of Iran's nuclear program that is exclusively, or virtually exclusively, designed for military use?

The short answer is no. At the current stage of the nuclear program – when the focus is still on obtaining the means to develop enriched uranium and plutonium – the technologies required for civil and military use basically are identical. Both enriched uranium and plutonium have legitimate civilian uses, whether power generation or general research. While Iran's program is impressive, from a strictly technical viewpoint it can be argued that it is simply a well-balanced, comprehensive nuclear infrastructure that will provide considerable research and production abilities. Iran's acknowledged plans

³⁰ ICG interview with Laurent Ruseckas, Director, Caspian Energy Team, Cambridge Energy Research Associates, 8 October 2003.

³¹ See Kemp, *op. cit.*, p. 51 (mentioning Russia, the U.S. and China).

³² ICG interview with Laurent Ruseckas, Director, Caspian Energy Team, Cambridge Energy Research Associates, 8 October 2003.

³³ "Flaring" refers to the practice of burning off natural gas discovered while drilling for or extracting petroleum from underground/undersea deposits.

³⁴ Iranian gasoline prices are so heavily subsidised that there is a substantial flow of black market fuel out of the country for sale abroad at market prices. As a result, Iran is forced to import gasoline to supply its domestic market. In 2003, the government limited some subsidies to reduce budgetary pressures. U.S. Department of Energy, "Iran: Country Analysis Brief", April 2003.

³⁵ "Latest Developments in the Nuclear Program of Iran", *op. cit.*, pp. 6-7.

to create and manipulate uranium metal are suggestive but not definitive proof of a military purpose. Ultimately, the only reliable indicator of military intent would derive from the use of non-nuclear, conventional technologies, such as chemical explosive structures required to detonate a nuclear bomb.

3. Has Iran violated the NPT, and are there legitimate explanations for its evasive behaviour?

The IAEA has not referred the case to the Security Council, so Tehran technically remains a member in good standing of the NPT. However, the agency's 19 June 2003 report leaves little doubt that Iran has failed to honour its obligations under the treaty and the related Safeguard Agreement, which sets out its specific reporting responsibilities. According to the IAEA, Iranian violations concern the "reporting of nuclear material, the subsequent processing and use of that material and the declaration of facilities where the material was stored and processed".³⁶

A follow-up IAEA report on 26 August 2003 found that Iran had improved its cooperation in terms of disclosure and access. Still, it noted that in some cases cooperation remained incremental and that responses to agency questions occasionally contradicted earlier responses and statements by Iranian officials.³⁷

The August report drew particular attention to Iran's behaviour with regard to the IAEA's efforts to inspect the Kalaye Electric Company facility in the suburbs of Tehran, where inspectors had detected the presence of enriched uranium. Iran turned down IAEA requests to inspect the facility and collect environmental samples, arguing that such inspections could be made only under the Additional Protocol, which it had not signed. In March 2003 Iranian officials allowed IAEA inspectors to view parts of the facility but did not permit environmental samples. When the entire workshop was opened to the IAEA in May 2003, inspectors noted what appeared to be a

series of modifications apparently intended to conceal whatever activities had been taking place.³⁸

In seeking to explain these findings, Iran has variously invoked honest misunderstandings, technical errors, rejection of the agency's allegedly unfair treatment of a member in good standing of the NPT, and, on occasion, flat denials of the agency's conclusions.³⁹ Tehran argues that it was under no obligation to inform the IAEA of its importation of materials from China because the amount of uranium fell short of the one "effective kilogram" threshold for notification.⁴⁰ It blamed the loss of some of the Chinese uranium fluoride on an equipment failure that was not noticed until quite recently. Denying that any uranium fluoride has been used to test Iran's centrifuges, officials claimed the enriched uranium detected at Natanz was the result of contamination of the equipment at the facility at its point of manufacture, an un-named foreign country – a contention that created additional concern, as Iran previously had stated that the gas centrifuges and other equipment at Natanz were of domestic manufacture.

According to Iran, modifications at the Kalaye facility observed by IAEA inspectors were intended not to conceal work performed but as part of a program to convert the area inspected from a storage facility to a laboratory.⁴¹ In response to revelations about Natanz and Arak, Iran argued that under the NPT neither facility is considered subject to IAEA safeguarding until nuclear materials are actually introduced to them, which, it asserts, has not occurred.

³⁶ IAEA, "Implementation of the NPT Safeguards Agreement", 19 June, op. cit. p. 3 fn. 5, pp. 7-8.

³⁷ IAEA, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran", GOV/2003/63, 26 August 2003, p. 10.

³⁸ IAEA, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran: Resolution Adopted by the Board", 12 September 2003, p. 2. IAEA environmental sampling subsequently indicated the presence of highly-enriched uranium at the Kalaye plant.

³⁹ As noted above, in turning over its declaration to the IAEA on 23 October 2003, Iran's representative acknowledged that Iran had been "discreet" about its activities.

⁴⁰ The IAEA rejected Iran's explanation, noting that the one-kilogram threshold (a unit used by the IAEA to measure the weight of useful uranium in a given amount of uranium ore) applied only to the Supplementary Agreement Iran had signed promising 180-day notice to the IAEA of nuclear material introduction to facilities within Iran. Any import of nuclear material into Iran from abroad, in any quantity, is supposed to be reported. IAEA, "Implementation of the NPT Safeguards Agreement", 19 June, op. cit.

⁴¹ IAEA, "Implementation of the IAEA Safeguards Agreement", 26 August, op. cit., p. 7.

By declining to forward the case to the Security Council and giving Iran until the end of October 2003 to provide fully adequate explanations, the IAEA chose to give Iran the benefit of the doubt. But to most observers, Iran's overall behaviour suggests a pattern of concealment and obfuscation that cannot but raise serious doubts as to motivation.⁴²

III. IRAN AND WEAPONS OF MASS DESTRUCTION

A. THE WORLD SEEN FROM TEHRAN

Iran faces a strategic environment that is more fluid and potentially more menacing than at any time in the past decade.⁴³ Ideologically hostile to Israel but culturally uncomfortable with the Arab world; persuaded it has no true ally but many potential adversaries; surrounded by countries whose governments are sympathetic to the U.S., host large U.S. military forces or both; and possessing a military capacity that is insufficient to deter its most powerful adversaries yet sufficiently intimidating to sow suspicion among its Gulf neighbours, Iran sees itself encircled and under threat.

There have been promising developments, notably the ouster of hostile regimes in Iraq and Afghanistan. But even these have come at considerable cost. In Iraq, roughly 130,000 U.S. troops are positioned, while a weak but pro-American government in Afghanistan that is host to further formidable U.S. forces borders on the east. Large U.S. naval contingents are continuously present in the Persian Gulf, and powerful U.S. air units are based at facilities in several Gulf and Central Asian states.⁴⁴ All this is occurring at a time when Washington has condemned Iran as one of three members of the "axis of evil" it perceives in the world, has already acted militarily against one member, and makes no secret either of its strong opposition to the Iranian regime (through rhetorical support for student demonstrations, the imposition of sanctions and pressure on others to follow suit)⁴⁵ nor

⁴² There is another possibility, which is that Iran deliberately is seeking to maintain a sense of ambiguity as a means either of persuading others it possesses a deterrent capability or of convincing Iranians that their leadership has pulled off a spectacular feat.

⁴³ See P. Jones, "Iranian Security Policy at the Crossroads?", *The Emirates Occasional Papers*, N°50 (2003), The Emirates Centre for Strategic Studies and Research.

⁴⁴ Current details of U.S. deployments in Iran's vicinity can be found at "Southwest Asia – U.S. Forces Order of Battle", at <http://www.globalsecurity.org/military/ops/swa-ops.htm>. From Tehran's perspective, American air and naval power are reasons for greatest concern. Since 95 per cent of Iran's exports move by sea through the Straits of Hormuz, the country is extremely vulnerable to a U.S. naval blockade. See Chubin, "Iran's National Security Policy", Carnegie Endowment for International Peace, 1994, p.10.

⁴⁵ Iran is the object of a number of broad unilateral sanctions based on Washington's determination that it is not cooperating with U.S. counter-terrorism efforts and on several counter-proliferation laws. Some of these sanctions have extraterritorial effect, authorising application against

of its desire to see it ousted. As Tehran University professor Sadegh Ziba-Kalam, an adviser to former President Rafsanjani, told ICG, "the Americans cannot seek Iran's cooperation yet at the same time plan for its overthrow".⁴⁶

Another neighbour, Turkey, although experimenting with parliamentary rule by an Islamic party, remains a member of NATO and a formidable military, economic and political competitor. To the east, Tehran views with great suspicion the radical Sunni militant groups with which a nuclear Pakistan continues to flirt and which have infiltrated important areas of its state structures.⁴⁷ Israel remains (the U.S. aside) by far the dominant regional military power and has hinted it might seek to set back Tehran's nuclear program by an air strike like that it undertook in 1981 against Iraq's Osirak reactor.

Interviews with ICG suggest differing perceptions among Iranian policy-makers and academics over which state presents the most serious threat. Most commonly mentioned, particularly by officials, were the U.S. and Israel.⁴⁸ Government officials were less likely to include Pakistan, despite a strong intellectual current within the country that sees the potential Talibanisation of that state as a looming

menace.⁴⁹ As an Iranian analyst put it, regardless of how one prioritises the dangers, "Iran doesn't have the luxury not to think about such concerns. We're right in the middle of it".⁵⁰

B. IRAN'S EXPERIENCE WITH WMD

The Islamic Republic's formative security experience was its 1980-1988 war with Iraq, in which it learned bitter lessons regarding war, peace and international politics. Although it halted Iraq's invasion and temporarily occupied a small part of that country, it was back on the defensive and forced to retreat by 1987, losing large numbers of men in the face of superior mechanised forces, artillery and chemical munitions.⁵¹ Iran emerged from the war bloodied and defeated.

Frustration and anger over the battlefield reverses were exacerbated by the international community's behaviour.⁵² Iran was the victim of Iraqi aggression, including repeated chemical attacks, both clear breaches of international law. Yet virtually no country came to its aid, either directly or by effectively sanctioning Iraq. Western nations continued to sell weapons and offer other forms of assistance to Iraq throughout the conflict.⁵³ In a much-noted comment, then-speaker of the *majlis* (parliament) Hashemi Rafsanjani stated that:

companies or countries engaging in specified activities in Iran regardless of the nationality of those companies. Of these, the most important is the Iran-Libya Sanctions Act (ILSA), passed in August 1996, which bans U.S. investment in Iran's oil and gas industry and authorises sanctions against firms and states that invest in Iran. See Katzman., "Iran: Current Developments and U.S. Policy", op. cit., pp. 9-11.

⁴⁶ ICG interview, Tehran, June 2003. Iran also is angered by U.S. (and Israeli) contacts with ethnic separatist groups. RFE/RL, "Iran Report", Vol. 5, N°32, 26 August 2002. There is some evidence to suggest Israeli support of some ethnic Azerbaijani groups active in northern Iran. "Voice of Southern Azerbaijan", *Clandestine Radio Watch*, available at <http://www.clandestineradio.com/archives/inactive/iran.htm>.

⁴⁷ For a discussion of Pakistan's internal political landscape and the role played by hard-line Sunni groups, see ICG Asia Report N°49, *Pakistan: The Mullahs and the Military*, 20 March 2003.

⁴⁸ Ali Reza Alavi-Tabar, a principal architect of the reform movement and adviser to President Khatami, told ICG: "Israel is always threatening us. If we were sure Israel wasn't going to hit us, we wouldn't be thinking about a bomb". ICG interview, June 2003. Others noted the irony that a nuclear weapons program is precisely what could provoke an Israeli attack. ICG interview with senior Iranian diplomat, September 2003.

⁴⁹ ICG interview with Nasser Hadian, professor of political science at Tehran University, New York, September 2003; ICG interview with Bijan Khajepour, chairman of Atieh Bahar consulting firm, Tehran, August 2003. A senior Iranian diplomat stated categorically that, from the Iranian government's point of view, "Pakistan is not a threat" and mentioned that even at the height of tension with Pakistan over Afghanistan, Tehran did not seriously contemplate the possibility of military escalation. ICG interview, September 2003.

⁵⁰ ICG interview with Bijan Khajepour, Tehran, July-August 2003.

⁵¹ Between April and August 1988, Iraqi forces defeated Iran in four separate battles - on the Al-Faw peninsula, near Al-Basrah, on the Majnun Islands and in the northern theatre in Iraqi Kurdistan. Federation of American Scientists. Military Analysis Network. "Iran-Iraq War 1980-1988", available at <http://www.fas.org/man/dod-101/ops/war/iran-iraq.htm>. No reliable figures on Iranian losses exist, though reports suggest at least 300,000 were killed and 500,000 wounded.

⁵² P. Jones, "Iran's Threat Perceptions and Arms Control Policies", *The Nonproliferation Review*, Fall 1998, p. 41.

⁵³ Chubin, op. cit., pp. 25-26. The U.S. assisted Iraq by providing military intelligence. See R. Francona and L. Perroot, *Ally to Adversary: An Eyewitness Account of Iraq's Fall from Grace* (U.S. Naval Institute Press, 1999).

chemical and biological weapons are the poor man's atomic bombs...we should at least consider them for our defence. Although the use of such weapons is inhuman, the war taught us that international laws are only scraps of paper.⁵⁴

Iran's war effort was further hampered by tight U.S. sanctions.⁵⁵ Its military, which the revolution and subsequent purge had considerably disrupted, suffered heavy equipment losses during the early part of the war and experienced significant difficulty finding replacements. While the Shah had built up one of the more powerful militaries in the developing world, it was heavily dependent for parts and maintenance support on the U.S. and Europe.⁵⁶ Denied these, it rapidly deteriorated. In response, Iran sought to shift to Soviet bloc suppliers. This also led to complications, as Iranian forces were equipped with an unwieldy assortment of Soviet, American and European items of varying vintages.⁵⁷

The impact of sanctions and dependency on unreliable foreign suppliers was underscored during the so-called War of the Cities, from 1984 to 1988, when the combatants conducted aerial and missile attacks against each other's capitals. Iran enjoyed an early advantage since Baghdad's proximity to the border allowed it to use relatively short-range missiles that it possessed in relative abundance. But by 1987, Iraq's development of a longer-range version of its SCUD missiles – the *Al-Husayn* – and steadily growing air force enabled it to strike Tehran and other major cities in the Iranian interior repeatedly. Iran was less and less able to respond effectively since it could neither manufacture similar missiles nor purchase sufficient quantities on the

international market.⁵⁸ Iranian civilians fled the capital in droves, their fear magnified by concern that Iraqi missiles might have chemical warheads.⁵⁹

It is hard to overstate the impact of Iraq's use of chemical weapons (CW) from 1983 to 1988 – on the southern battlefronts, but also inside Iraq in Halabja, where thousands of civilians perished, and during the Anfal operation – on both Iran's war effort and its longer-term strategic thinking. As the war carried on, Iraq's use of CW intensified. It was a critical factor in Iran's decision to end the war despite its failure to achieve territorial or political gain in the six years since it had driven Iraqi forces from its own territory:⁶⁰

Iraq consistently used chemical weapons to sow terror in the ranks of its enemies – with sensational results. Poison gas was the only weapon that proved capable of breaking up the Iranian human wave assaults, dispersing and demoralising the curious mix of zealots and forcibly-induced foot soldiers. And it was the only weapon able to utterly defeat the Kurdish insurgency, flushing Kurds hardened to years of artillery and air bombardments out of the countryside in a matter of hours.⁶¹

Ironically, its old enemy's crushing defeat at the hands of the U.S. in the 1991 Gulf War did little to

⁵⁴ Quoted in Jones, "Iran's Threat Perceptions", op. cit., p. 41.

⁵⁵ The U.S. imposed economic sanctions on Iran following the seizure of its embassy in Tehran on 4 November 1979. In January 1984, the U.S. added Iran to its list of terrorism-supporting countries because of its assistance to the Lebanese Hizbollah, believed responsible for the deaths of 241 U.S. Marines in a 1983 suicide bombing in Beirut. This designation obliges the U.S. to oppose multilateral loans to Iran in any forum.

⁵⁶ M. Eisenstadt, "Instability in Central Asia and the Caucasus and Iranian Weapons Proliferation", paper prepared for a conference on "Energy, Weapons Proliferation, and Conflict in Central Asia and the Caucasus" sponsored by the National Bureau of Asian Research (NBR) and the United States Institute for Peace (USIP), 20-21 April 1999, p. 3.

⁵⁷ Chubin, op. cit., p. 18.

⁵⁸ Iran's problems in matching Iraqi missile capabilities likely derived from a shortage of funds combined with a limited number of suppliers. American pressure was effective in closing off access to European and Asian stocks; this resulted in a marked shift to East Bloc weapons of all types. However, because Iraq was a Soviet ally and an important market for Soviet weapons, Iran's ability to purchase missiles from these sources also was constrained. Chubin, op. cit., pp. 21-26.

⁵⁹ Iraq made an implicit but unambiguous threat to this effect immediately after the Halabja operation. Ultimately, the missile attacks did not inflict heavy casualties; it was the fear they inspired that proved politically important.

⁶⁰ See J. Ali, "Chemical Weapons and the Iran-Iraq War: A Case Study in Non-Compliance", *The Nonproliferation Review*, Spring 2001, p. 52, fn. 72 (citing a CIA post-war assessment). Claims repeatedly have been made that Iran used chemical weapons as well. See Stephen Pelletière, *Iraq and the International Oil System* (Westport, 2001), p. 206. U.S. officials made similar assertions during the war. However, no evidence for such a claim has come to light. See contribution by Joost Hiltermann, "Unfinished Business: Iran, Iraq and the Aftermath of War", in the forthcoming volume *Iran, Iraq and the Aftermath of War: Unfinished Business*, Lawrence G. Potter and Gary G. Sick eds. (New York, 2003-2004).

⁶¹ Hiltermann, op. cit.

allay Iran's fears. Instead, the sight of a U.S.-led military force swiftly destroying a large Iraqi field army brought home that Iran's conventional military offered no protection against its strongest potential opponent.⁶² Nor was Iran fully confident that the sanctions imposed on Iraq were airtight or would last indefinitely. From Iran's perspective, Baghdad's determination to rebuild its military capabilities and its WMD programs was a given as long as Saddam Hussein remained in power.

Whatever interest Iran has in developing weapons of mass destruction must be understood in this broader historical and regional context rather than strictly attributed to the ideological inclination of the current regime. Iraq's use of chemical weapons coupled with virtual international acquiescence "gave the impetus for Iranian programs of weapons of mass destruction".⁶³ In the face of repeated Iraqi CW attacks, Iran began threatening to develop its own chemical weapons program and a senior Iranian diplomat told ICG that his country had in fact begun such development but that its weapons were not ready by the time the war came to an end.⁶⁴ As the author of an in-depth study on the use of CW during the Iran-Iraq war remarks, "the world's ability to address Iran on any programs it may have today is reduced dramatically by the Iranian perception, based on its jarring sense of having been abandoned during the war with Iraq, that it has no one to protect it from Iraq's WMD but its own deterrent WMD".⁶⁵

Surrounded by countries that possessed them and feeling vulnerable in the face of overwhelming U.S. and Israeli superiority, Iran saw WMD as a potentially effective deterrence. Self-reliance in all critical areas of technology and manufacturing came

to be viewed as the only way Iran could assure itself of reliable defence in the event of crisis.⁶⁶ As former Iranian Defence Minister Akbar Torkan asked rhetorically, "can our air force...take on the Americans, our navy take on the American Navy? If we put all our country's budget into such a war we would have just burned our money. The way to go about dealing with such a threat requires a different solution entirely".⁶⁷

Whether that solution must lie chiefly in acquisition of some form of WMD is another matter. Iraq's possession of biological and chemical weapons did not deter the U.S. and the international coalition during the first Gulf war; suspicion that it still or again possessed them did not dissuade the U.S. – quite the contrary – in the second.⁶⁸ Tehran undoubtedly has taken note. Based on its reading of the situation and on the U.S.'s comparative treatment of Iraq and North Korea, however, the Iranian regime might have concluded that acquisition of a nuclear weapon would fundamentally alter the landscape. Iran would not be in a position to target the U.S. homeland given the limitations of its missiles, but it could pose a considerable threat to U.S. military forces in the Persian Gulf or to U.S. regional allies whose cooperation would be necessary in any attack on Iran.⁶⁹

Threat perception aside, many Iranian officials and policy-makers appear determined to pursue both missiles and nuclear technology for reasons having to do with national pride, a deep conviction that Iran

⁶² Chubin, op. cit., p. 20. Iranian thinking in this regard undoubtedly has been reinforced by the even more impressive performance of the U.S. military during the 2003 Iraq War. While the coalition's forces encountered a far weaker Iraqi defence and are experiencing serious security problems in the post-war period, the speed and efficiency of their advance during the combat phase were startling.

⁶³ Hiltermann, op. cit.

⁶⁴ ICG interview, September 2003. Hiltermann concludes: "The Iranian CW program is thus a direct result of the Iraqi CW program, Iraq's repeated use of CW during the war, and the failure of the international community to put an end to it, or even give it the serious and sustained attention it deserved. If Iran has active, or even dormant, programs in weapons of mass destruction today, this would, therefore, be an undisputable result of [the international community's] failure".

⁶⁵ Hiltermann, op. cit.

⁶⁶ Eisenstadt, "Instability in Central Asia", op. cit., p. 3.

⁶⁷ Quoted in *Financial Times*, 8 February 1993. A similar sentiment was expressed regarding Israel. "We cannot compete militarily with Israel. They are simply too far ahead of us". ICG interview with senior Iranian diplomat, September 2003.

⁶⁸ Eisenstadt, "Instability in Central Asia", op. cit., p. 5.

⁶⁹ Although Iran does not possess a missile with intercontinental range, it has announced plans to build such a weapon – the *Shahab-6* – which would have the range to reach the eastern seaboard of the United States. See "Iranian Missiles/Shahab 6 IRSL-X-4", at <http://www.fas.org/nuke/guide/iran/missile/shahab-6.htm>. That said, Iran would face considerable technical challenges, even were it to enjoy foreign help. See Karp, "Lessons of Iranian Missile Programs", op. cit., pp. 21-22. In what may be an effort to find a technological shortcut, Iran allegedly has experimented with launching shorter-range missiles from seagoing surface vessels. If successful, this might enable Iran to transport its weapons within firing distance of targets on the U.S. or European coastlines. See Eisenstadt, "Instability in Central Asia", op. cit., p. 8.

must be treated as a respected regional power and resentment of international double standards.⁷⁰ As an Iranian official told ICG:

India and Pakistan have both acquired nuclear weapons, were softly reprimanded, and currently enjoy strong relations with the U.S. As for Israel, it has been given an international pass.⁷¹

IV. THE DEBATE WITHIN IRAN

The Iranian regime largely remains a closed system, particularly in regard to national security issues. Still, there is strong evidence of an internal debate concerning its nuclear program and its attitude toward the international community. Policymakers have taken different public positions, and the existence of vigorous discussion was confirmed to ICG by Iranian officials and analysts. Nor can the nuclear debate be divorced from the broader issue of U.S.-Iran relations, which is marked by three often competing trends: a growing consensus among policy-makers and the public at large on the need to improve the relationship; intensified suspicion, particularly among hardliners, regarding the Bush administration's true intentions; and rivalry between the different factions as to who will broker a rapprochement and on what terms.

A. SHOULD IRAN PURSUE A NUCLEAR ENERGY PROGRAM?

One consensus that appears to span the political spectrum concerns Iran's right to develop a peaceful nuclear energy program.⁷² Iranian representatives continually insist that their country is a party in good standing to the NPT, whose provisions it has not violated, and point out that under the terms of that agreement it is entitled to import nuclear technologies. The director of the foreign ministry's think tank expressed this view: "Iran has not violated the NPT....The United States is trying to deprive Iran of its rights. The starting point is wrong".⁷³ In interviews with ICG, Taha Hashemi, a Shiite cleric and adviser to Supreme Leader Khamenei, and Ali-Reza Alavi-Tabar, an adviser to President Khatami, offered strikingly similar views, arguing that Iran

⁷⁰ Several Iranian analysts made the point to ICG that Iran regards itself as the Britain or France of the Middle East – deserving of the same treatment, and entitled to the same know-how. ICG interviews, Paris, October 2003.

⁷¹ ICG interview with senior Iranian diplomat, September 2003.

⁷² President Khatami explained: "It is an integral part of the fundamental duties of the Islamic Republic...to become more and more equipped with science and technology, including nuclear technology. [W]e want to be strong, and being strong means to have technology and nuclear technology is the most advanced, one that we would master thanks to the intelligence and will of our children". Iran Press Service, 16 September 2003.

⁷³ ICG interview with Dr. Sayed Kazem Sajjadpour, Tehran, June 2003.

had a legitimate need for nuclear energy, and the West was being hypocritical.⁷⁴

Iranian officials also point out that U.S. efforts to sever Iranian access to nuclear technologies from third parties contributed to the decision to acquire the capacity to produce an independent, indigenous fuel cycle, distinct from the Bushehr plant.⁷⁵ While some Iranian officials concede that this would give Tehran the means to construct a nuclear bomb, they counter that it also would protect Iran from any future interruption of fuel supplies – low-enriched uranium and plutonium – for its peaceful nuclear installations.⁷⁶

While, as discussed above, Iranians bring up economic reasons for developing a nuclear program, when pressed they tend to fall back on issues of national pride and fairness. Major international and regional powers possess nuclear energy and, as an Iranian diplomat who himself is strongly opposed to any nuclear military program made clear, the civilian program has become a “national project”, a source of pride that no decision maker, whether reformist or conservative, could abandon, and that no economic argument, however forceful, could successfully challenge.

B. SHOULD IRAN COOPERATE WITH THE IAEA AND, IN PARTICULAR, SIGN THE ADDITIONAL PROTOCOL?

Although Iran appears to have decided to comply with the IAEA's 31 October 2003 ultimatum, virtually all Iranian decision-makers viewed it as humiliating and unwarranted and pointed to what they consider unfairly high obligations it sought to impose. Iran's atomic chief, Qolamreza Aqazadeh, who generally has argued for cooperation with the IAEA, explained that Iran “has serious problems with [the IAEA's] resolution”, mentioning its “inconsistency with the NPT to its deadlines for cooperation and its venomous language”.⁷⁷ Still,

most members of the reform camp, but also a number of conservatives, argued that Iran's national interests would have been severely hurt by a rejection of the IAEA's demands. Subsequent referral to the Security Council would have increased the nation's vulnerability and diplomatic isolation, cost it precious trade deals and subjected it to possible further economic sanctions and restrictions on the importation of nuclear technology.⁷⁸ The U.S./EU front – both demanded that Iran sign the Additional Protocol without preconditions, insisted that Iran suspend uranium enrichment and warned that the matter would otherwise be referred to the Security Council – appears to have played a significant role, persuading even prominent conservatives of the need to reach an agreement with the EU ministers.⁷⁹

Deputy Foreign Minister Mohsen Aminzadeh seems to have emerged as one of the more vocal advocates of cooperation. Conceding that Iran is the victim of an unfair double standard, and acknowledging that the U.S. might issue supplementary demands even after signature of the protocol, he nonetheless urges a flexible approach:

We have to adopt a policy that will make it safe for Iran. Our friends tell us that we need to sign this protocol so that the U.S. will not have any excuses to incite them against us. Those friends of Iran say that they're willing to defend our position...and if there is no other way but signing this protocol...then we have no other choice but to sign it....Those countries are telling us that they cannot resist

⁷⁴ ICG interviews, Tehran, June 2003. Ali Reza Alavi-Tabar told ICG: “We're only after nuclear energy. Selling our oil is more profitable than using it domestically”.

⁷⁵ ICG interview with senior Iranian diplomat, September 2003.

⁷⁶ Ibid.

⁷⁷ Iran Press Service, 16 September 2003. He went on to say that the “resolution [of the IAEA] goes beyond the words and spirit of the NPT and the IAEA statutes, even beyond the provisions of the Additional Protocol”.

⁷⁸ A report by the Economist Intelligence Unit (EIU) highlighted the risks to Iran's economy of a decision to rebuff the IAEA's demands. Should the UN impose sanctions, it would “temporarily at least, deter European and Asian oil companies from investing in Iran. This would clearly harm the oil sector...and damage economic growth and Iran's external and fiscal position”. EIU, 24 September 2003. Iran's deputy foreign minister explained: “signing the protocol will lead to having nuclear technology for peaceful purposes and is therefore in our interests”, and added, “if they [the international community] continue to impose sanctions on us, that would be very difficult for us and would be even more devastating than a military [attack]”, *Iran* (daily), 23 September 2003. Dr. Hossein Salimi, dean of an Iranian law faculty, asked “Is Iran's demand to enjoy nuclear technology worth putting the country's vital national interests at risk given that the vast energy resources and Iran's enormous potential of human resources promise a prosperous future for the country?” Ibid., 5 August 2003.

⁷⁹ That was the analysis of a French official involved in negotiations with Iran. ICG interview, Paris, October 2003.

American pressure unless we make it easy for them to do that – i.e., change our policies.⁸⁰

Several prominent political leaders went further, putting forward the idea that the U.S. or some country friendly to the U.S. ought to construct Iran's nuclear plants, thereby both allaying U.S. fears and meeting Iran's technological requirements.⁸¹

Support for cooperation with the IAEA, nevertheless, was undercut by a conviction among some Iranians that it would do little to modify Washington's stance, and this should be borne in mind as the process unfolds. Whereas Iranians wanted assurances that responses to the IAEA's questions and signature of the Additional Protocol would essentially "end the matter"⁸² and provide access to nuclear technology,⁸³ U.S. officials made clear that they would only be a first step. Allowing Iran to develop a full range of nuclear capabilities, however safeguarded, is unacceptable to the Bush administration. Seen from the perspective of some Iranians, the nuclear crisis is only part of Washington's strategy to undermine and ultimately oust the regime.⁸⁴ They fear that despite the agreement, EU countries could give in to U.S. pressure, meaning that access to nuclear technology once again would be barred.⁸⁵

This gave ammunition to the minority who oppose signing the protocol or even favour withdrawing from the NPT altogether. The most prominent public advocate of this view is the head of the Guardian Council, Ayatollah Ahmad Jannati, who asked, "What is wrong with considering this treaty on nuclear energy and pulling out of it? North Korea withdrew. Many countries have never entered it".⁸⁶ Fear of a strong reaction by the U.S. or others – including a military attack – which reached its height in the immediate aftermath of the Iraq War in the early part of 2003, also has receded somewhat as Iran's leaders contemplate America's growing difficulties in that country and declining domestic support for the war.⁸⁷

As some see it, complying with U.S or European demands without a clear and unequivocal quid pro quo would both humiliate Iran and potentially expose it to IAEA "spying" on the U.S.'s behalf.⁸⁸ An Iranian academic explained, "If they [the conservatives] think they are going to be damned either way, they might as well do as they please".⁸⁹ As a result, advocates of a cooperative stance toward the IAEA were insistent that, in exchange, Iran receive assurances that it would be allowed to continue its nuclear program for peaceful purposes.

⁸⁰ Interview in *Iran*, 23 September 2003.

⁸¹ ICG interview with senior Iranian diplomat, September 2003; ICG interview with Alavi-Tabar and Taha Hashemi, adviser to Supreme Leader Khamenei, Tehran, June 2003.

⁸² ICG interview with senior Iranian diplomat, September 2003.

⁸³ Iran's atomic chief, Qolamreza Aqazadeh, said that Tehran would continue cooperating with the IAEA but underscored its expectation that, in return, "Iran's right to the peaceful nuclear technology must also be accepted as an established and recognised fact", Iran Press Service, 16 September 2003.

⁸⁴ In the words of one of his advisers, "Ayatollah Khamenei is not necessarily opposed to the idea of restoring ties with the U.S., but he has strong reservations as to whether Iran can count on the U.S. as a fair partner". ICG interview with Taha Hashemi, Tehran, June 2003.

⁸⁵ This view was expressed to ICG in advance of the agreement by an Iranian diplomat. ICG interview, September 2003. "The remarks by certain European officials – including the German Foreign Minister Joschka Fischer – that even Iran's signing of the Additional Protocol would not be enough, show that pressuring Tehran to 'unconditionally' sign the protocol is not intended to remove the security concerns of the U.S. and the EU, but is rather meant to humiliate Iranians. The pressure on Iran signifies the start of a campaign to end the Islamic regime by preparing the ground for its surrender". Javad Vaidi, "Iranians are Alive" (*Iraniha Zendehand*), *Hambastegi*, 9 August 2003.

⁸⁶ *Telegraph*, 21 September 2003. *Jomhoori Eslami*, a daily that is close to the Supreme Leader, wrote: "one must accept that North Korean dealing with IAEA and NPT is the correct one", Iran Press Service, 16 September 2003. North Korea withdrew from the NPT on 10 January 2003.

⁸⁷ In both Tehran and Damascus, ICG noted a similar pattern of high-level anxiety followed by the conviction that the U.S. at worst would be fully absorbed by dealing with Iraq and, at best, would turn to Iran and Syria for help in that regard. ICG interviews in Damascus, July 2003; Tehran, June-July 2003.

⁸⁸ "This protocol means any spy can give a fake report to the U.S. and its allies so they can put their hands on all of our secret intelligence...the best and most reasonable solution for Iran is withdrawing from the NPT", Hossein Shariatmadari, editor of the hardline *Keyhan*, 12 June 2003. Deputy Foreign Minister Aminzadeh responded to such claims: "Some people think that if they came and inspected they would inspect things unrelated to nuclear energy...But with the technology they have it's not necessary for them to look at everything". To which he added: "Even if we discovered that they had other intentions, it's not going to present any greater problem than what we now have", *Iran* (daily), 23 September 2003.

⁸⁹ ICG interview with Tehran University political science professor with close ties to the reform camp, Tehran, July 2003.

C. SHOULD IRAN PURSUE A MILITARY NUCLEAR PROGRAM?

Officially, Iran's position is unambiguous. From the Supreme Leader on down, the public posture has been that it is not interested in developing a nuclear weapon, citing both moral and religious prohibitions.⁹⁰ The position was reiterated in the 21 October joint statement in which Iran "reaffirmed that nuclear weapons have no place in Iran's defence doctrine". Officials emphasise that acquisition of a bomb would make the situation "more dangerous",⁹¹ and that a military program would "not enhance Iran's security" but "augment its vulnerability"⁹² by offering a "pretext" and a "target" for hostile powers such as the U.S. and Israel and leading Gulf nations to take protective counter-measures.⁹³

But beneath the surface unanimity lies a more animated controversy suggesting that the regime at the very least may wish to keep the military option open.⁹⁴ The differentiated treatment of India, Pakistan and Israel on the one hand (all with military programs) and Iran on the other, the increased sense of strategic encirclement, belligerent rhetoric from Washington and the comparative fates of the Iraqi and North Korean regimes, have emboldened those who believe Iran should develop a military nuclear capacity, by

either withdrawing from the NPT or violating it.⁹⁵ A high-level Iranian diplomat, whose opposition to the military option is well-known, lamented to ICG that while "two years ago it was a totally one-sided debate, and those that voiced support [for a nuclear weapon] were barely audible, today their viewpoint has become more mainstream".⁹⁶

On its face, the internal debate would appear to oppose those who believe Tehran should pursue only a nuclear energy program and those who argue it also should pursue a nuclear weapons capability and, among the latter, those who wish to pursue it tactically (as leverage for a more attractive deal) or strategically (as an instrument of self-defence and national pride).⁹⁷ Those holding more extreme views on either side – that Iran ought immediately to start developing a nuclear bomb or that it ought to forsake an independent nuclear energy capability altogether – appear to represent distinct minorities for now. Speaking of the hard-line conservatives, an Iranian analyst said: "I believe they are willing to cooperate. But their mentality is, 'what are we going to get in return? You sanction everything for us, but don't

⁹⁰ On 18 August 2003, Khamenei asserted: "The Islamic Republic of Iran, based on its religious and jurisprudence fundamental beliefs, would never resort to the use of weapons of mass destruction", Iranian News Agency, 19 August 2003. Khatami has stated: "We don't want nuclear arms, no, no, no, this is against our policy and our faith", Iran Press Service, 16 September 2003.

⁹¹ ICG interview with Taha Hashemi, managing editor of *Entekh*, and adviser to Supreme Leader Khamenei, Tehran, June 2003.

⁹² ICG interview with Iranian diplomat, September 2003.

⁹³ *Ibid.* Significantly, the same diplomat told ICG that this rationale "does not apply" to Iran's missile program. Missile delivery systems, he argued, can be an effective deterrent against greater powers in ways a nuclear weapon cannot.

⁹⁴ Observers who believe this to be the case often point to a 2001 speech by Rafsanjani that generated considerable concern in Israel and the U.S.: "If one day, the Islamic world is also equipped with weapons like those that Israel possesses now, then the imperialists' strategy will reach a standstill because the use of even one nuclear bomb inside Israel will destroy everything". When questioned, Iranian officials dismiss such statements as "rhetoric intended for a domestic audience only", ICG interview with Iranian diplomat, September 2003.

⁹⁵ A slightly different argument, connected to Iran's domestic situation, was made by Abu Mohammed Asgar-Khani, the "father" of the country's nuclear program: "If you ask me if Iran needs to nuclearise itself, I would say this is a must for Iran's strategy of survival. A nuclear Iran must not be seen as a threat to its neighbouring countries or to Israel. The weapons would serve as a minimum deterrence for self-defence in a world of uncertainty. It is necessary not only as a substitute for fossil energy but also for Iran's social cohesion and prestige...Internally Iran is in a state of disarray. I would now argue that, only by becoming a nuclear weapons state, can Iran consolidate its social coherence. Iran needs both soft and hard power to regain its national identity and prestige". *Daily Star* (Lebanon), 15 September 2003.

⁹⁶ He added that such views are especially in vogue in influential academic circles, where concern over Iran's regional status and over Pakistan – its bomb and the risk of a radical Sunni takeover – are greatest. ICG interview, September 2003.

⁹⁷ ICG interview with academic with close ties to the regime, September 2003. He cautioned that U.S. and Israeli threats risk further strengthening those advocating a military program, by intensifying the desire to establish Iran's sovereignty and independence. The opinion that Iranian officials have not yet made a final, irrevocable decision is supported by Geoffrey Kemp, a senior U.S. National Security Council official under the Reagan administration. He writes: "Some senior Iranian officials...are not convinced that moving from a nuclear infrastructure to the actual fabrication and deployment of nuclear weapons is in Iran's national interest", and argues that diplomatic means may be available to persuade Iran to forego the military option, *op. cit.*, p. 49.

want us to use the one thing we built ourselves”⁹⁸ Iranians like to point to Brazil, which was “persuaded to trade its nuclear plan for conventional weapons technology. They’ve now become a major exporter of the latter. Similarly, it can’t be all sticks and no carrots for Tehran”⁹⁹.

D. THE NUCLEAR ISSUE IN DOMESTIC POLITICS

The nuclear issue both affects and is affected by Iran’s fractured domestic politics.¹⁰⁰ Intense popular dissatisfaction with the regime and increased tension between the conservative establishment and reformist forces have resulted in a virtual policy log-jam that applies to domestic and foreign policy alike. With rival camps looking over each other’s shoulders and facing a precarious domestic situation, each seeks to prevent the other from taking credit for a diplomatic breakthrough, and neither feels in a position to make a bold move of its own. The possibility of improved relations with the U.S. has perhaps been the most notable casualty – aided, in fairness, by divisions within the U.S. administration.

The impact on the nuclear debate has been varied and, at times, contradictory. Typically, hard-line elements in the regime have benefited from periods of greater international tension when nationalist feeling is at its height. In this case, too, U.S. pressure has helped them to some extent shift attention from the question of the wisdom of the nuclear program to issues of national sovereignty and independence. Yet, they also are aware of the public’s weariness with isolation, and of the domestic political cost associated with a decision that would increase it. A showdown with the U.S. could provide some short-term benefits, provoking a national reflex of solidarity, but at possible long-term cost.

Nor, based on ICG interviews in Iran, is there any evidence that the Iranian people would react with anything like the Pakistani public’s enthusiasm to news of a bomb.¹⁰¹ Iranians expressed widespread opposition to acquisition of a nuclear bomb, believing it would expose their country to foreign attack or further entrench the current regime. The latter concern was particularly pronounced among younger Iranians. “I fear that if these guys get the bomb they will be able to hold on to power for another 25 years...Nobody wants that”¹⁰².

For their part, reformers are fearful of being seen as bending to international pressure, particularly when the demands made by the West are widely perceived as humiliating and unfair. Indeed, even among an Iranian public that overwhelmingly favours improved relations with the U.S., ICG found considerable suspicion of its motives, with many ordinary Iranians believing the nuclear crisis is an American and Israeli fabrication designed to pressure the regime.¹⁰³ Prevalent support for Iran’s right to pursue a peaceful energy program – regardless of the economic rationale – can largely be explained in terms of national pride and rejection of double standards as can, to a lesser degree, support within intellectual and academic circles for a military program (again, without any consideration of its military value).¹⁰⁴

E. WHO DECIDES?

Iran’s political system is a blend of theocracy, authoritarianism and democracy in which elected and unelected leaders share power. Power, especially on issues affecting national security, lies in the hands of the more conservative establishment. In particular, the 1979 constitution makes the Supreme Leader commander in chief of all armed forces with the ability to declare war, mobilise troops and

⁹⁸ ICG interview, Tehran, August 2003.

⁹⁹ ICG interview with Iranian political analyst, Tehran, August 2003. While the Brazilian case, in which a well-advanced nuclear weapons research program was dismantled by the government, has attracted considerable attention among some Iranians; others like to point to the fact that Brazil’s nuclear disarmament was preceded by the ouster of the military regime and a settlement of tensions with its regional rival, Argentina. See <http://www.ceip.org/files/Publications/TrackingBrazil.asp?p=8>.

¹⁰⁰ On the domestic situation, see ICG Middle East Report N°5, *Iran: The Struggle for the Revolution’s Soul*, 5 August 2002 and ICG Briefing, *Iran: Discontent and Disarray*, op. cit.

¹⁰¹ ICG interviews, Tehran, June-July 2003.

¹⁰² ICG interview with 29-year-old Iranian professional, Tehran, August 2003. According to a long-time employee of the National Iranian Oil Company (NIOC), “I think they’re after nuclear weapons. This will ensure their stability. Nuclear power isn’t the great hope it once was, and we have so much oil and gas...it doesn’t make sense to say it’s for energy”. ICG interview, Tehran, August 2003.

¹⁰³ A Tehran university student made this plain: “I don’t believe we’re after a bomb ...the U.S. is always looking for an excuse to harass these mullahs”, ICG interview, Tehran, August 2003.

¹⁰⁴ Farideh Farhi, “The WMD debate in Iran”, presented at the Wilson Centre, Washington, 25 September 2003.

appoint and dismiss, among others, the supreme commanders of the Revolutionary Guards, the regular military and the security services. The democratically elected President's responsibilities are primarily social, cultural, and economic. Although the President nominally chairs the Supreme National Security Council (SNSC), the Supreme Leader has ultimate authority.¹⁰⁵

The secretive and multi-layered nature of Iranian politics renders at best speculative any assessment of who are the nuclear decision makers. On 1 October 2003, Iran appointed a five-member team to decide policy regarding the 31 October IAEA deadline. It includes the foreign minister, Kamal Kharrazi; the minister of information, Ali Yunessi; the defence minister, Ali Shamkhani; the secretary of the SNSC, Hassan Rowhani; and the Supreme Religious Leader's advisor for international affairs, Ali Velayati.¹⁰⁶ According to most reports, Rowhani emerged as the key figure.

That said, there is reason to question whether this group actually possesses ultimate authority over the future of Iran's nuclear program. Although some Iranian analysts believe Khamenei has the final say,¹⁰⁷ and others – including mid-ranking officials – are sceptical,¹⁰⁸ the general assumption is that the nuclear inner circle includes the country's highest-ranking officials (President Khatami, former President Rafsanjani and the foreign minister); the head of the SNSC; Gholam Reza Aghazadeh, former oil minister and current head of Iran's Atomic Energy Organization; Ali Akbar Salehi, Iran's ambassador to the IAEA; and Hossein Afarideh, a reformer and head of the parliament's energy commission, who holds a doctorate in nuclear

engineering and has emerged as an outspoken proponent of signing the Additional Protocol.

But even that much is not known for sure. Some Iran experts believe that most high-level officials are kept in the dark, making it easier for them to assert that Iran does not have a nuclear weapons program. According to a well-informed observer, "If they don't know the details, then it's much easier for them to just repeat what they've been told. That way it's not like they're consciously being untruthful or evasive".¹⁰⁹ That formula appears to have been used under the Shah. According to a high-ranking Iranian diplomat from that era, "the nuclear issue was never discussed, other than my superior saying, 'there is no nuclear program'. That's what we were instructed to repeat. I would not be surprised if this is a top-secret project carried out only by a very small coterie of officials. No one really knows".¹¹⁰

Government officials and Iranian analysts also point to two non-officials as playing important roles in the decision-making process: Mir-Hossein Musavi, who was Prime Minister from 1980 to 1989, and Dr. Abu Mohammad Asgar-Khani, a professor of international relations at Tehran University whom some officials have called the "father" of Iran's nuclear program.¹¹¹ Musavi is widely credited for having kept Iran's economy afloat during the brutal eight-year war with Iraq. Touted as a potential presidential candidate in 1997, he has since shied away from politics, and his views on today's nuclear issue remain unknown. Asgar-Khani, though considered a pragmatist, has been one of the very few Iranians to state publicly that it is in Iran's national interest to develop a nuclear weapon.¹¹²

¹⁰⁵ See ICG Report, *Iran: The Struggle for the Revolution's Soul*, op. cit., and ICG Briefing, *Iran: Discontent and Disarray*, op. cit. The SNSC comprises, inter alia, the heads of the executive, legislative, and judicial branches; the chief of the combined General Staff of the Armed Forces; two representatives chosen by the Supreme Leader; the commanders of the Islamic Revolutionary Guard Corps and the regular military as well as the ministers of Foreign Affairs, Interior and Information.

¹⁰⁶ *The New York Times*, 2 October 2003.

¹⁰⁷ ICG interview with Iranian political analyst, Tehran, July-August 2003.

¹⁰⁸ A 35-year veteran of Iran's Foreign Ministry told ICG, "Even we don't really know who's behind it. Khamenei is the spokesperson, but behind the curtain (*posht-e pardeh*) it's not clear who is making the decisions", ICG interview, Tehran, August 2003.

¹⁰⁹ ICG interview, Tehran, August 2003.

¹¹⁰ ICG interview, Tehran, August 2003.

¹¹¹ ICG interview with high-ranking Iranian diplomat, September 2003.

¹¹² See "Iran, Sept. 11 and the repercussions of 'regime change'", *Daily Star* (Lebanon), 15 September 2003.

V. THE POSITIONS OF OUTSIDE PLAYERS

A. THE UNITED STATES

The Clinton administration's basic approach to Iran was summed up in the "dual containment" policy, an attempt to isolate both Tehran and Baghdad, while focusing on the Middle East peace process. Despite occasional efforts to reach out to the regime, particularly after Khatami's election, Iran's hostility toward that peace process, support for groups engaged in terrorist activity and suspected pursuit of a nuclear weapons program helped persuade U.S. officials that containment, rather than engagement, was the correct stance.¹¹³ This built on a legacy going back to the early 1980s of "strong U.S. opposition to all nuclear cooperation with Iran, even ostensibly peaceful nuclear cooperation...under IAEA safeguards".¹¹⁴

The centrepiece of U.S. policy was to pressure third parties. U.S. policy aimed to slow and disrupt Iran's program, cutting off its access to supplies of material and expertise by offering incentives and disincentives to suppliers – states, corporations and individuals alike. Having concluded that one of Iran's principal vulnerabilities was its dependence on Russia – in particular for the development of the nuclear power plant at Bushehr – the Clinton administration invested considerable time and energy seeking to get Moscow to stop supplying the required technology, with promises of economic payback and threats of economic penalties or worse.¹¹⁵ As part of this effort, in 2000 Congress passed the Iran Non-Proliferation Act, which authorised sanctions against states,

entities and individuals that aided Iranian efforts to develop or acquire missile technology or weapons of mass destruction.¹¹⁶

The results were, at best, mixed.¹¹⁷ In 1995, Russia signed a contract under which it was to complete one unit of the Bushehr project and any spent fuel would be sent back to it. Later, Washington discovered that the cooperation went much further and included supply of a uranium enrichment centrifuge plant. During a series of bilateral meetings chaired by U.S. Vice President Al Gore and Russian Prime Minister Viktor Chernomyrdin, the two sides discussed measures aimed at slowing down or preventing Russian conventional arms sales and missile and nuclear technology transfers to Iran.¹¹⁸ In December 1995, these discussions resulted in a Russian commitment "to limit its cooperation with Iran to Unit 1 of the Bushehr plant", a step viewed by Washington at the time as significant.¹¹⁹ U.S. pressure subsequently led to Moscow's adoption of legislation aimed at preventing the export of nuclear-related items.

But any success proved short-lived. Either Russia's leaders failed to believe Washington's warning that the bilateral relationship was at risk, its businesspeople had too much at stake in dealings with Iran, or both. By 2000, Russia, now under the leadership of President Vladimir Putin, had drifted from the Gore-Chernomyrdin understandings and asserted its "right to provide Iran with nuclear power reactors as legitimate civilian commerce",¹²⁰ arguing that any cooperation was for peaceful purposes and that assistance meant both Russian ability to keep a

¹¹³ For a discussion of U.S. concerns, see ICG Report, *Iran: The Struggle for the Revolution's Soul*, op. cit., pp. 27-29.

¹¹⁴ Robert Einhorn and Gary Samore, "Ending Russian Assistance to Iran's Nuclear Bomb", *Survival*, Vol. 44, p. 52 (2002). As the authors note, the Reagan administration initiated a policy of no nuclear dealings in the early 1980s. The U.S. successfully persuaded other countries, notably Germany (which had been working on the Bushehr plant), to follow suit.

¹¹⁵ Russia was by far the "most important source of advanced technologies for Iran's nuclear and missile programs", Robert Einhorn and Gary Samore, "Ending Russian Assistance", op. cit. The authors, who were members of the Clinton administration, note that Russia's nuclear cooperation with Iran "became one of the most contentious and frustrating bilateral problems between Washington and Moscow". *Ibid.*

¹¹⁶ The act sought to address Russian involvement with Iranian missile programs in particular by banning "extraordinary payments" due to the Russian Aviation and Space Agency for that entity's work on the International Space Station, because of evidence that firms involved with it had also transferred missile technology to Iran. Katzman, "Iran: Current Developments and U.S. Policy", op. cit., p. 9.

¹¹⁷ Clinton administration officials took the view that the effort had succeeded in slowing down Iran's progress while increasing its costs and forcing Iran to rely on less sophisticated and reliable technologies. "Iran: Russia Viewed As Biggest Supporter of Weapons Program", RFE/RL, *Weekday Magazine*, 6 October 2000.

¹¹⁸ The meetings, which also discussed many other bilateral issues, were informally known as the Gore-Chernomyrdin Commission.

¹¹⁹ Einhorn and Samore, op. cit., p. 53. Further tension arose in the relationship as a result of Russian sales of technologies that could assist Iran's intermediate-range missile capacity.

¹²⁰ *Ibid.*, p. 57.

close eye on Iran's activities and leverage if Iran threatened to violate its NPT commitments.

The Bush administration came into office committed to stem the flow of nuclear technology but with a question mark surrounding its overall Iran policy. Some speculated that shortcomings in the Clinton administration's approach coupled with what appeared to be a general distaste for sanctions and a decision to focus on Iraq would lead to a fundamental reassessment. Whatever the original intent, events soon heightened the sense of crisis among U.S. decision makers, leading to a policy that has vacillated between tentative engagement and, more frequently, hostility.

The key events were 11 September 2001 – which, although Iran was not involved, contributed to a hardening of U.S. policy toward states that combined support for terrorist groups with suspected pursuit of a WMD program¹²¹ – and the discovery in 2002 of the two previously unknown Iranian nuclear facilities and subsequent detection of traces of enriched uranium. Periodically tempted to open a channel with Tehran to discuss issues of common concern – first Afghanistan, then Iraq – Washington has been pulled in the other direction by a conviction shared by most in the administration that Iran is attempting to build a nuclear device under the cloak of membership in the NPT and that its support for radical Middle Eastern groups continues unabated.¹²² As the expressed U.S. concern on the nuclear front increased, speculation mounted about a possible pre-

emptive strike against Bushehr,¹²³ though American officials have denied any such intent.¹²⁴ Instead, in marked contrast to its policy toward Iraq, the administration chose to concentrate on building a strong international coalition aimed, at least in the first instance, at pressing Iran to cease enrichment activity, sign the Additional Protocol and reveal more information about the extent of its nuclear program, with the threat of Security Council referral and multilateral sanctions should it balk.

The U.S. also continued efforts aimed at Russia but with scant success. In mid-2002, Moscow announced plans to increase nuclear cooperation with Iran greatly, agreeing to build five more nuclear reactors. While the Russian authorities expressed unease following subsequent revelations of secret facilities and the detection of enriched uranium by the IAEA, there has been no sign that Moscow is considering cutting back on its involvement with Iran's nuclear program.¹²⁵ Officials merely reiterated their pledge that Iran will not have access to spent fuel from the Bushehr reactor, which will be returned to and stored in Russia.¹²⁶

Reaction in Washington to the 21 October 2003 joint declaration was generally upbeat, with President Bush calling it “a very positive development”.¹²⁷ But even assuming Iran lives up to its commitments, fundamental issues are likely to remain. Divisions among U.S. policy-makers complicate matters.¹²⁸

¹²¹ The Bush administration's approach after 11 September built on its scepticism regarding the efficacy of multilateral instruments like arms control treaties and cold war concepts such as deterrence in a new security environment where threats can come with minimal warning from “rogue states” and sub-national actors such as al-Qaeda. In a 31 May 2003 speech, President Bush outlined a new Proliferation Security Initiative setting out a range of possible measures intended to prevent or impede proliferation, including the imposition of sanctions against individuals, companies, research institutes and governments identified as either sources or seekers of WMD and missile technologies, as well as the interdiction by U.S. and allied military forces of shipments of WMD and missile technologies and supplies. On the initiative's specific relevance to Iran, see “Target Iran – Blockade”, available at www.globalsecurity.org/military/iran-blockade.htm.

¹²² U.S.-Iran talks in Geneva began prior to the war in Afghanistan in October 2001 but were broken off in May 2002 after Washington complained that Iran was sheltering al-Qaeda fugitives from Afghanistan suspected of involvement in the 12 May 2002 suicide bomb attacks in Saudi Arabia. *The Washington Post*, 28 May 2003.

¹²³ See, for example, D. Priest, “Iran's Emerging Nuclear Plant Poses Test for U.S.”, *The Washington Post*, 29 July 2002.

¹²⁴ During a meeting of the G-8 in France in June 2003, leaders such as Italy's Prime Minister Silvio Berlusconi stated that President Bush had said “there was no foundation to speculation” that the U.S. might attack Iran's nuclear facilities. U.S. officials speaking off the record agreed that such speculation “was not warranted”, Associated Press, 2 June 2003.

¹²⁵ The most recent attempt by the U.S., at the 27 September 2003 meeting between Presidents Bush and Putin, appears to have yielded little fruit, Associated Press, 29 September 2003. U.S. officials note that as a result of efforts to share information about the activities of Russian corporations, research institutes and individuals with the Russian authorities, Moscow may have sought to silence those who had provided information to the U.S. Moreover, no action appears to have been taken against the proliferators. See S. Peterson, “Russian Nuclear Know-How Pours into Iran”, *Christian Science Monitor*, 21 June 2002.

¹²⁶ *Ibid.*

¹²⁷ Reuters, 22 October 2003.

¹²⁸ ICG interview with U.S. official, October 2003.

Advocates of a hard-line approach – denying the Iranian regime any nuclear program, even under stringent safeguards – argue that Iran is unworthy of international trust.¹²⁹ They believe that Tehran must forsake the Bushehr plant and halt the construction of additional centrifuges or of the heavy water reactor at Arak – items on which the joint declaration is silent.¹³⁰ Their fundamental problem is with the NPT regime per se, which (they correctly point out) treats dissimilar governments alike, allowing all to come within similar reach of a nuclear weapon. Under their view, the issue is not the spread of WMD technologies as such – and hence the solution does not lie in non-proliferation treaties – but the character of the regimes that have been seeking to acquire them. Accordingly, any promises that states like Iran make to the IAEA cannot be trusted, and international inspections would be unable to monitor their activity effectively.¹³¹ Taking this view to its logical conclusion, some have argued that preemptive counter-proliferation (the attempt to actively disrupt, if necessary by military means, a suspect state's nuclear program) is required.¹³²

¹²⁹ In contrast, Secretary Powell has said: “we never asked Russia not to build the plant at Bushehr”, *The New York Times*, 7 October 2003.

¹³⁰ For sceptical U.S. reactions to the deal between Iran and the EU countries, see Patrick Clawson, “Iranian-European Nuclear Deal: An Achievement with a Potential Poison Pill”, Washington Institute for Near East Policy, 22 October 2003; Gary Milhollin, “The Mullahs and the Bomb”, *The New York Times*, 23 October 2003.

¹³¹ ICG interview with U.S. official, Washington, 16 September 2003. The so-called neo-conservatives are not alone in expressing scepticism regarding the non-proliferation regime. A number of European officials, for instance, share Washington's lack of trust in the Additional Protocol as an effective check on Iran's nuclear program. ICG interview with European diplomat, Tehran, July 2003. Indeed, even a high-ranking Iranian diplomat acknowledged to ICG that, were Iran to sign the Additional Protocol, the U.S. is right that it would offer no guarantee against a determined Iranian effort to develop a military program – all it would have to do would be to withdraw from the NPT and convert its legally-acquired technologies to military use. In his words, “if the U.S. considered us as it does Canada, it would not require us to sign the protocol. Because it does not, even the protocol is not enough. It all comes down to trust, which we do not have”. ICG interview, September 2003.

¹³² Bill Keller, “The Thinkable”, *The New York Times Sunday Magazine*, 4 May 2003, p. 48. The U.S. invasion and occupation of Iraq in 2003 was widely seen as the first “counter-proliferation” war. The difficulties attendant to the U.S. occupation, and the failure to date to locate any Iraqi WMD, arguably have undermined those most aggressively

The situation within the administration is not static; recent statements by Secretary Powell indicating that Washington would respond to Tehran's rhetorical overtures indicate a possible softening, as does President Bush's own reactions to the Europeans' deal.¹³³ State Department officials argue that Iranian cooperation with the IAEA, and in particular signature and implementation of the Additional Protocol, will strengthen the hands of those favouring a policy of engagement and accelerate a renewal of contacts on a variety of issues – WMD, but also Iraq and Afghanistan.¹³⁴

B. THE EUROPEAN UNION

Unlike the Iraq case, Iran's has brought Europeans and Americans closer together around a clear, two-pronged policy: insistence that Iran comply with the IAEA and in particular sign and implement the Additional Protocol; referral of the case to the UN Security Council if it does not. The similarity of views is all the more striking since the U.S. and EU have had different approaches toward Iran for years.¹³⁵ European countries opted for a policy of engagement, consisting of official dialogue, people-to-people exchanges and trade,¹³⁶ and the European Commission has been pursuing negotiations with Tehran on a Trade and Co-operation Agreement (TCA). With the U.S. advocating sanctions and pressure, it clashed frequently with the EU over trade issues, especially the application of its Iran-

pushing the counter-proliferation line within the administration, though a definitive judgment remains premature. ICG interviews with U.S. officials, Washington, August-September 2003.

¹³³ Secretary Powell said he “it's encouraging that [Iran] is sending out . . . signals, and we are responding to those signals...What we are looking for is not a confrontation or a crisis with Iran,” *The Washington Post*, 4 October 2003.

¹³⁴ ICG interview with U.S. official, Washington, September 2003. Prior to the 21 October announcement, U.S. Under Secretary of State John Bolton had expressed concern that Iran would seek to do just enough to split the U.S. from the EU: “They will try and throw sand in our eyes and use a modest level of cooperation to hide some level of obfuscation and lack of cooperation, to conceal as much as they can, to delay, to fight for time, and to avoid having the issue referred to the Security Council”, Reuters, 10 October 2003.

¹³⁵ See ICG Report, *Iran: The Struggle for the Revolution's Soul*, op. cit., pp. 32-34.

¹³⁶ A number of high-level European officials have visited Iran in recent months, including in August 2003 EU High Representative Javier Solana and, in February 2003, EU External Affairs Commissioner Chris Patten.

Libya Sanctions Act to European companies investing in the oil sector.

The turning point for Europe appears to have been the IAEA's discovery of previously unknown activity regarding uranium enrichment during its February 2003 visit.¹³⁷ In response, the EU took a much firmer position toward the nuclear question, "shocking"¹³⁸ Tehran by essentially echoing Washington's immediate demands. The EU took the unusual step of mentioning Iran by name in its opening statement at the NPT Preparatory Committee in April-May 2003.¹³⁹ Speaking in Tehran on 30 August 2003, EU High Representative Javier Solana made clear that a failure to sign the Additional Protocol and cooperate fully with the

IAEA would have a damaging effect on Iranian-EU relations.¹⁴⁰

The EU reaffirmed and strengthened its stance at the 8 September 2003 IAEA Board of Governors Meeting in Vienna, calling on Iran to sign, ratify and implement the Additional Protocol, put its provisions into immediate effect, and halt its uranium enrichment program, at least until lingering questions are resolved.¹⁴¹

The 21 October 2003 joint statement represents a clear success for the EU's strategy. As many European officials see it, it vindicated their decision to pursue a policy of pressure and engagement, while exemplifying the advantages of close cooperation within the EU and between the EU and the U.S.¹⁴² It also demonstrated the EU's considerable leverage resulting from trade with Iran. EU imports from Iran grew from €3.7 billion in 1998 to €8.4 billion in 2000, and the Union is now Iran's largest trading partner. Relations could grow even closer, should the two sides complete negotiations on the TCA, which would greatly facilitate both European investment in Iran and Iranian access to European goods, services and markets.¹⁴³ The EU has implicitly linked its demands on the nuclear agenda to the pending TCA negotiations.¹⁴⁴

¹³⁷ Bruises from the Iraq debate may have played a part, as some Europeans were eager to demonstrate a capacity to work constructively with the U.S. on a security, non-proliferation issue. But the EU's stance was part of a broader and longer-term effort to toughen its behaviour toward nuclear proliferation. At the June 2003 European Union Summit in Thessaloniki, foreign ministers approved an EU Security Strategy and two additional documents, the "Basic Principles for an EU Strategy against Proliferation of WMD" and an "Action Plan for the Implementation of the Basic Principles". The Security Strategy states that "the proliferation of Weapons of Mass Destruction is the single most important threat to peace and security among nations". Draft European Security Strategy Presented by the EU High Representative for the Common Foreign and Security Policy, Javier Solana, to the European Council, 20 June 2003 in Thessaloniki. The Basic Principles document notes: "If the regime is to remain credible, it must be made more effective...it also means dealing with those who cheat...the EU will place particular emphasis on defining a policy reinforcing compliance with the multilateral treaty regime", <http://ue.eu.int/pressdata/EN/reports/76328.pdf>. The new EU Action Plan calls for the threat of effective punishment in addition to the use of incentives to get problem states to comply with arms control agreements, drawing a direct linkage between the maintenance of EU cooperation and assistance programs and recipient state adherence to non-proliferation agreements. Taken together, these documents represent an endorsement of the use of preventive "coercive measures" under UN auspices against nuclear proliferators, though such measures would be invoked only after diplomatic and economic measures had been exhausted.

¹³⁸ ICG interview with a U.S. official, October 2003.

¹³⁹ Tom Sauer, "EU Strategy on Nuclear Non-Proliferation", paper presented at the European Consortium for Political Research (ECPR) Conference in Marburg (Germany), 18-21 September 2003.

¹⁴⁰ "Full cooperation and transparency with the IAEA are fundamental, now and in the future. Confidence is key...the signature and full implementation of [the additional] protocol would be a crucial factor in creating that confidence. We expect to see rapid progress in the discussions with the IAEA. Only by taking such steps we will be able to avoid unwelcome effects on EU-Iran relations", summary of the statement of Javier Solana, 30 August 2003.

¹⁴¹ The EU expressed concern that Iran had not disclosed the "full scope and extent" of its nuclear program, its receipt of nuclear material and sophisticated technology, and the facilities where nuclear material was stored. It described as "deeply disturbing" the fact that the IAEA had found particles of enriched uranium in Iran and demanded "clarification" of Iran's heavy water projects and its production of uranium metal. EU statement, IAEA Board of Governors Meeting, Vienna, Austria, 8 September 2003.

¹⁴² ICG interview with French official, Paris, October 2003.

¹⁴³ See "EU-Iran: Commission proposes mandate for negotiating Trade and Co-operation Agreement", Brussels, 19 November 2001, http://europa.eu.int/comm/external_relations/iran/news/ip01_1611.htm.

¹⁴⁴ See European Council conclusions, 29 September 2003. Technically, the only precondition for the conclusion of the negotiations is the standard political dialogue clause stipulating that the "EU expects that the deepening of economic and commercial relations between the EU and Iran

Both the U.S. and the EU have welcomed the joint stand and, in the wake of the agreement with Iran, President Bush stressed that he “appreciated...very much” the Europeans’ efforts.¹⁴⁵ But it is unclear how long this consensus will last. A European official involved in negotiations with Iran told ICG that “the United States resisted our approach of engaging with Iran every step of the way, though they welcomed the results we achieved every step of the way”.¹⁴⁶ Washington appears uneasy with the inducements the Europeans put forward, in particular the offer of technological cooperation in the nuclear field; it also is unclear whether the U.S. and the EU will see eye to eye on the question of Bushehr or whether they will react in identical fashion should Iran decide to resume uranium enrichment under international safeguards. As a French official told ICG prior to the 21 October agreement, the “real test will not come now, nor, perhaps, if Iran refuses to sign the protocol and the issue is sent to the Security Council. It will appear if Iran starts to comply”.¹⁴⁷

Internal EU cohesion, too, has been striking up to this point, arguably a reflection of member states’ desire to overcome the sharp and perilous divisions that marked the Iraq debate and demonstrate that the EU remains a relevant political as well as economic actor. Again, however, differences based on the depth of individual trade and investment ties with Iran may well surface.¹⁴⁸ Some EU officials share the U.S. concern that Iranian compliance with IAEA demands would not be sufficient. As a European diplomat told ICG: “Some of our experts are hoping that Iran will not sign the Additional Protocol, fearing that it offers policy makers a sense of relief they shouldn’t have.”¹⁴⁹

will be matched by similar progress in the areas of political dialogue and counter-terrorism”, EU Presidency and Commission Joint Press Release on the Opening of the Negotiations with Iran, Brussels, 12 December 2002. In fact, the negotiations are on hold, the EU having refused to set a date for the next round. Iran has not asked for a date, aware that this would force the EU to acknowledge that it is postponing negotiations because of the nuclear issue. ICG interview with EU diplomat, Brussels, 18 September 2003.

¹⁴⁵ President Bush explained that “I believe, in this case, [European nations] generally are concerned about Iran developing nuclear weapons”, *The New York Times*, 23 October 2003.

¹⁴⁶ ICG interview, Paris, October 2003.

¹⁴⁷ ICG interview, October 2003.

¹⁴⁸ ICG interviews with EU officials, Brussels, September 2003.

¹⁴⁹ ICG interview, September 2003.

C. RUSSIA

Russia has taken the position that it opposes the emergence of Iran as a military nuclear power. President Putin has repeatedly affirmed that “Russia has no desire and no plans to contribute in any way to the creation of weapons of mass destruction, either in Iran or in any other region of the world”.¹⁵⁰ However, and in spite of persistent, high-level efforts by successive U.S. administrations involving both incentives and threats, Moscow has refused to comply with Washington’s demand for a complete cessation of nuclear cooperation with Iran. Instead, Russian entities have continued to assist Iran’s nuclear and missile programs, and the government has either turned a blind eye or, in some instances, provided active cooperation.

Moscow’s decision to take over the Bushehr project from Germany and complete it was essentially economically driven. Since the collapse of the Soviet Union, the aerospace and nuclear sectors have been in a struggle for survival, with foreign markets in less developed countries their only potential markets. From Washington’s vantage point, Russia’s calculus may appear skewed given the relatively small value of its exports to Iran. However, “to the industrial sectors affected...the benefits can be significant. It is estimated, for example, that more than 300 Russian enterprises take part in the Bushehr project and that the project has created about 20,000 jobs”.¹⁵¹ Added to that are Russia’s persistent fear that the U.S. is seeking to keep the Iranian market for itself, once issues with Tehran are resolved,¹⁵² and the desire for good relations with Iran as an insurance policy against Islamic fundamentalism.

In line with the rest of the international community, however, Russia has adopted a stronger rhetorical stance, backing, for example, the 31 October 2003 IAEA deadline.¹⁵³ In an interview with a U.S. newspaper, President Putin went further in acknowledging the validity of some American concerns:

We are not only hearing what our U.S. partners are telling us, we are listening to what they have to say, and we are finding that some

¹⁵⁰ *The Washington Post*, 28 September 2003.

¹⁵¹ Einhorn and Samore, op. cit., p. 61.

¹⁵² ICG interview with Georgi Mirski, researcher at the Russian Academy of Science, Moscow, October 2003.

¹⁵³ Agence France-Presse, 11 September 2003.

of their assertions are justified. For example, their professional observation that spent fuel can subsequently be enriched and used as a component of nuclear arms....That is why we have put the question before our Iranian colleagues that spent Russian nuclear fuel must be returned to Russia, and now we are seeking to introduce such stipulations in our agreements. We also believe...that Iran has no justification not to allow the overview of the IAEA over their nuclear programs, and therefore in this area again our positions fully coincide with that of the Americans.¹⁵⁴

Still, Russia remains convinced that Iran should be offered incentives for signing the Additional Protocol¹⁵⁵ and adamant that it will complete Bushehr.¹⁵⁶ In Putin's words, broadly shared objectives with the U.S. do "not imply that...we're going to suspend all of our programs".¹⁵⁷

D. CHINA

The nuclear relationship between China and Iran began in the mid-1980s when Beijing agreed to train nuclear technicians; in 1992, China agreed in principle to deliver several nuclear reactors.¹⁵⁸ Although a number of deals fell through, China continued work on a small research reactor and a zirconium¹⁵⁹ production facility. As with Russia, the U.S. tried strenuously to persuade China to abandon its nuclear assistance; unlike Russia, China relented. In October 1997, then U.S. National Security Advisor Samuel Berger stated: "We have received assurances from the Chinese that they will not engage in any new nuclear cooperation with Iran and that the existing cooperation...will end".¹⁶⁰

China's role in Iran's nuclear program resurfaced in the context of the IAEA's June 2003 report, which revealed previously undisclosed delivery by Beijing of natural uranium. After repeated inquiries, China admitted that it had provided Iran with 1.8 metric tons of uranium compounds. The CIA also has raised questions regarding China's compliance with the 1997 assurances. A 2003 report noted that "some interactions between Chinese and Iranian entities may run counter to Beijing's expressed bilateral commitments to the United States".¹⁶¹

In the current controversy, China has called on "other countries, particularly countries with significant nuclear activities, to sign, ratify and implement Additional Protocols as soon as possible", adding, however, that "the Iranian nuclear issue should be handled in a pragmatic and prudent manner so as to create favourable conditions for the resolution of the issue".¹⁶²

¹⁵⁴ *The New York Times*, 6 October 2003.

¹⁵⁵ At a joint press conference with President Bush, President Putin stated: "It is our conviction that we shall give a clear but respectful signal to Iran about the necessity to continue and expand its cooperation with the IAEA", *The Washington Post*, 28 September 2003.

¹⁵⁶ ICG interview with Vladimir Govorukhin, Deputy Minister of MINATOM, Moscow, October 2003. Russia will receive U.S.\$800 million only upon completion of the power plant.

¹⁵⁷ *The New York Times*, 6 October 2003.

¹⁵⁸ Congressional Research Issue Brief, 9 June 1997.

¹⁵⁹ Zirconium is a metal commonly used in an alloy form to encase fuel rods in nuclear reactors.

¹⁶⁰ The White House, Office of the Press Secretary, 29 October 1997. China's decision came about in the context of

a broader U.S.-China understanding concerning peaceful nuclear cooperation between the two countries.

¹⁶¹ Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, 1 January through 30 June 2002", April 2003. CIA Director Tenet also mentioned China, along with Russia and North Korea, as "continu[ing] to supply crucial ballistic missile-related equipment, technology and expertise to Iran", quoted by BBC, 8 September 2001. As recently as July 2003, the U.S. imposed sanctions on several Chinese companies alleged to have transferred missile technology to Iran, BBC, 4 July 2003.

¹⁶² Xinhua news agency, 19 June 2003.

VI. NEXT STEPS

The efforts undertaken by the EU and the first steps taken by Iran have defused the crisis for now, but they will not close the matter. Iran has indicated it would sign and ratify the Additional Protocol but made clear it would abide only insofar as its “national interests and prestige” were respected, perhaps foreshadowing protracted discussions over the precise modalities of inspections.¹⁶³ It also has signalled that its decision to suspend uranium enrichment would last “for a short time” only.¹⁶⁴ Finally, it made no commitment regarding future construction of centrifuge or heavy water facilities. All these are of major concern to the U.S., for whom compliance with the Additional Protocol is far from sufficient. Indeed, that protocol does not forbid states to produce and stockpile large quantities of fissile material, then announce departure from the NPT¹⁶⁵ and rapidly begin to manufacture nuclear weapons using previously safeguarded material. Distrustful of its intent and alarmed by its broader policies in the region, Washington appears determined to subject Iran to a higher-than-usual standard and to insist that it do far more to satisfy U.S. concerns. Rightly or wrongly, the Iranian nuclear dilemma will remain alive for the U.S. regardless of whether Tehran lives up to its commitments. The 21 October 2003 agreement, in short, is more likely to result in a crisis deferred than a crisis resolved.

A. BUILDING ON THE 21 OCTOBER AGREEMENT

Although it is most strongly expressed in the nuclear area, the U.S.-Iranian crisis has deeper roots in the latter's support for groups that resort to terror in their opposition to the Middle East peace process, as well

as the former's sanctions and hostile posture toward Tehran. So long as these tensions remain, resolution of the nuclear issue will be at best partial, and probably temporary. However, the fact that the U.S.-Iran dispute cannot be addressed comprehensively at this time does not mean that it cannot be addressed at all. A diplomatic solution growing out of the Iran-EU agreement should be sought that would maximise U.S. confidence in Iran's nuclear intentions while responding to both Iran's aspiration to develop peaceful nuclear energy and its legitimate security concerns.

In addition to immediately and fully responding to the IAEA's questions and signing the Additional Protocol, as it has committed to do, Iran should promptly declare all its existing nuclear facilities. In order to further enhance confidence in its intentions, Iran also should accept intrusive, unrestricted international monitoring of all its nuclear sites and civilian research centres. With regard to uranium enrichment, it ought to pledge that should it decide to resume its activities, it would do so only after agreeing to appropriate further arrangements such as permanent onsite international monitoring. This could go as far as to involve joint Iranian/international management of the sites.¹⁶⁶ Iran should agree to halt any effort to build a heavy water reactor and pledge that any such reactor will not be put into operation until such time as agreement has been reached with the international community on further onsite monitoring or joint management arrangements. Finally, and in order to boost confidence in its intentions, Iran ought to commit not to deploy a *Shahab-3* missile to any location from where it could hit Israel (i.e., nowhere north or west of the city of Yazd) and to an immediate moratorium on the research, development, construction and/or importation of the *Shahab-3* or any other missile with a range exceeding 320 kilometres (200 miles).

Some, particularly in the U.S., have advocated an outcome that would impose greater restraints on Iran. They argue that, in exchange for the international community's recognition of Iran's right to pursue a peaceful nuclear program, Iran should forego its right to develop an indigenous yellowcake-to-enrichment capacity. In other words, the Bushehr project – in which the enriched uranium

¹⁶³ IRNA, quoting Hassan Rowhani, Secretary of the Supreme National Security Council, 21 October 2003.

¹⁶⁴ Ibid.

¹⁶⁵ Article XVIII D of the IAEA Statute provides that “At any time after five years from the date when this Statute shall take effect...or whenever a member is unwilling to accept an amendment to this Statute, it may withdraw from the Agency by notice in writing to that effect given to the depositary Government referred to in paragraph C of article XXI, which shall promptly inform the Board of Governors and all members”. See <http://www.iaea.org/worldatom/Documents/statute.html#A1.18>.

¹⁶⁶ Iranian officials on various occasions have hinted that they would be prepared to accept such an intrusive international presence. ICG interview with Iranian diplomat, September 2003.

is provided by Russia and the spent fuel is returned to Russia – could continue but Natanz and the potential heavy water reactor at Arak – where Iran could in time develop either the capacity to enrich the uranium or to produce plutonium – would not. The problem with this idea is that Iran almost certainly would reject it, and, assuming Iran complies fully with IAEA demands, much of the international community might not insist on it either. Many NPT members have developed their own full program capacity (e.g., Belgium, Germany, Japan, Argentina and Brazil), and Iran sees no reason why it ought to be treated differently. Besides, if Iran is determined to develop an indigenous nuclear capacity, it could build a plant elsewhere and not declare it. The solution described above – allowing Iran its rights under the NPT but putting in place far-reaching international controls and safeguards – is not ideal, but seeks to appropriately balance the parties' various interests.¹⁶⁷

For its part, and assuming the requisite Iranian steps, the international community should commit to a mix of measures aimed at addressing Iran's most pressing economic and security needs. Europe would have to live up to its commitment to provide Iran with nuclear technology and materials, and the U.S. undertake not to impede the sale of such items. In addition, Washington should pledge not to seek or undertake overthrow of the regime. Building on signs that Tehran is interested in a dialogue with Washington, the U.S. and Iran should resume their discussions on issues of common concern, such as the futures of Iraq and Afghanistan.¹⁶⁸ Negotiations with the EU over the TCA should resume and be concluded, subject to satisfactory resolution of other issues of concern.

In the longer run, some of Iran's security concerns that lie at the root of its WMD considerations – in particular, encirclement by hostile or potentially hostile neighbours – should begin to be addressed in a regional security forum that might be convened by

the UN or an ad hoc group of the states concerned.¹⁶⁹ The forum would aim to reach an arms control agreement regulating the military size and capabilities of Iran, the sovereign government of Iraq (once established) and other Gulf states, including controls on the numbers, payload capacity and range of Iraqi and Iranian missile forces.

The controversial question of Israel's own nuclear capacity is bound to be raised in this context. While it cannot be resolved at this time, the regional forum might offer a creative way both to sidestep the issue in the short term in and to pave the way for consideration in the future. Specifically, the regional forum could signal its readiness to include Israel once peace agreements were reached with the Palestinians, Syria and Lebanon and that it would work toward the goal of establishing a zone free from weapons of mass destruction. Such an approach, if accepted, would indicate Iran and the Arab world's readiness to normalise relations with Israel (consistent with the Arab League resolution) and take its security concerns into account. At the same time, it would defer the sensitive issue of Israel's nuclear capacity while making clear that it would need to be addressed once a comprehensive peace were achieved.¹⁷⁰

Negotiations along these lines would present considerable challenges. As previously stated, the various measures singly and even jointly would not erase the entrenched hostility between Washington and Tehran; whether the nuclear issue and related security matters could be compartmentalised from other matters remains to be seen. Indeed, some in Washington may not wish to reach any agreement with Iran, persuaded that it would only tighten the regime's hold on power at a time when (they assert) it is losing its grip. Certainly, in any discussion Iran is likely to raise U.S. sanctions, and the U.S. is likely to raise Iran's support for groups that engage in terrorism. But as a respected Iranian diplomat told ICG, the "the political psychology in Tehran and

¹⁶⁷ A European official involved in negotiations with Iran told ICG that, while the preferred end-goal was to see Iran dismantle Natanz, there were "intermediary" solutions that should be explored, including the establishment of an "international consortium" to run the plant. ICG interview, October 2003.

¹⁶⁸ In the wake of the 21 October agreement, Iran's foreign minister stated: "The United States cannot ignore Iran's significant status in the region and the country's great potential in settling regional problems", IRNA, 22 October 2003.

¹⁶⁹ In an interview with ICG in September 2003, an Iranian diplomat suggested that such a forum, under UN auspices, could be helpful.

¹⁷⁰ IAEA Director General Mohamed El-Baradei recently indicated he has received indications from Israel that it would be willing to discuss the disposition of its nuclear program and any nuclear weapons it may possess – it has never officially acknowledged such a capability – once comprehensive peace agreements are reached with its neighbours, "Report: El-Baradei says Israel open to Nuke disarming", Reuters, in *Haaretz*, 26 October 2003.

Washington is not ripe for a grand bargain on these issues".¹⁷¹

It also will be extremely difficult for the U.S. to have high confidence in Iranian promises to halt or not engage in suspect nuclear activities. While the inspection regime set forth in the Additional Protocol represents progress over the NPT's reliance on voluntary disclosure, the process still would depend on Iran's good faith in identifying nuclear facilities to the IAEA.

B. POLICY OPTIONS IN THE EVENT OF A BREAKDOWN

Option 1: Non-Military Coercion to Halt Iran's Nuclear Program

In the event Iran does not live up to its commitments or, worse, takes steps signalling its intention to develop a nuclear military capacity – for example by diverting spent fuel or resuming enrichment activity or putting a heavy water reactor into operation in the absence of strict monitoring – other options need to be considered.

In this scenario, the UN Security Council should agree to the imposition of a series of targeted sanctions aimed at deterring Iran from further nuclear development by increasing the political and economic cost of the program. These could include an immediate ban on the sale or transfer of all nuclear and missile technology and dual-use technology that could be relevant to nuclear or missile programs. Should Iran fail to modify its behaviour within the following six months, the ban could be extended to the transfer of conventional weapons and a moratorium on all new economic agreements with Iran.¹⁷²

Because the U.S. already imposes tight unilateral sanctions, Europe's role would be central; conclusion of the TCA is critically important to improving Iran's economy – and improving the economy is critically important to ensuring the stability of its regime.¹⁷³ The EU, therefore, would need to suspend all

negotiations on the TCA. Additionally, Russia would have to freeze all activity with regard to Bushehr.

Proceeding down this path would not be easy. Reservations about sanctions run deep in the international community, and countries enjoying close links with Iran would be loath to jeopardise them, particularly in the economic field. The efficacy of this option also is far from clear. U.S. attempts to pressure Iran through sanctions have failed in the past; if Iran's leaders have concluded that developing a bomb is a vital national interest, they could do so relying essentially on their own means and, where necessary, on clandestine purchases. They are unlikely to be dissuaded by threats. Moreover, they may take encouragement from precedent and wager that the underlying divergence between U.S., EU and Russian views would re-emerge and that any response to Iran's military program would be short lived as other regional and security considerations asserted themselves. In the cases of India and Pakistan, for example, sanctions imposed after their detonation of nuclear weapons in 1999 were lifted in short order.¹⁷⁴

Some may hope that tough sanctions would accelerate the collapse of the Iranian regime but there are no indications that such an eventuality is imminent.¹⁷⁵ While the religious theocracy is deeply unpopular, there are no readily available political alternatives, and the regime has proved able to remain in power through a combination of repression and economic cooptation. As a former U.S. official explained: "In a race between the regime's acquisition of a nuclear bomb and its eventual downfall, the bomb will prevail".¹⁷⁶

Nuclear Interdiction? As an additional step, the international community could seek to strengthen practical barriers to Iran's acquisition of nuclear technologies. This could encompass a range of actions, from encouraging individual states to increase their monitoring of purchase attempts by Iranian agents and front companies to the imposition

¹⁷¹ ICG interview, September 2003.

¹⁷² Patrick Clawson, "Evaluating the Options Regarding the Iranian Nuclear Threat", *Washington Institute for Near East Policy*, 17 September 2003.

¹⁷³ See ICG Briefing, *Iran: Discontent and Disarray*, op. cit.

¹⁷⁴ According to a Western intelligence official with close contacts in the country, Iran does not believe the EU can act effectively in a crisis and assumes it can be relatively easily manipulated – a point of view strengthened by debates occasioned by the U.S. decision to invade Iraq, ICG interview, 15 September 2003.

¹⁷⁵ See ICG Briefing, *Iran: Discontent and Disarray*, op. cit.

¹⁷⁶ ICG interview, Washington, September 2003. There also is no guarantee that a successor regime would halt a nuclear program many see as vital for Iran.

of a land, sea and air interdiction regime to prevent nuclear technologies from reaching Iran.

There is little doubt that individual states could more closely scrutinise possible technology exports to Iran, and efforts are under way to legalise and operationalise multilateral action (including military action) against suspected proliferators. Led by the U.S. and its allies, the Proliferation Security (or Madrid) Initiative would give the international community the capacity to search and seize ships and aircraft carrying suspect cargo to designated interdicted nations.¹⁷⁷

But the downsides are apparent. Some states will not offer their full cooperation, leaving potential holes through which Iran might still be able to procure nuclear technologies. An airtight interdiction would be extraordinarily difficult to enforce. In the case of Iran, it would require a multinational force patrolling sea, air and land approaches, stopping and searching vessels, aircraft and ground vehicles seeking to enter the country. Russian cooperation would be critical in patrolling the Caspian Sea, and Azerbaijani, Armenian and Turkish cooperation would be required to seal Iran's northern frontier; Pakistan would have to enforce a much tighter regime on its wild border area with south-eastern Iran. U.S. and allied forces would have to commit fairly substantial naval and air forces to the Persian Gulf, Central Asia and Turkey to cover air approaches to Iran and ensure the availability of bases where intercepted aircraft could be forced to land for inspection and, if necessary, seizure. While naval procedures for enforcing an interdiction regime are fairly straightforward and widely practiced, there has never been an attempt to prevent air transport by force short of war, and such efforts would be fraught with difficulties and potential for missteps. For example, if an aircraft bound for Iran refused to follow interceptors, policy makers would be confronted with a stark choice between permitting the flight to proceed and shooting it down.

An interdiction operation is in some respects similar to a blockade, which is traditionally regarded as an

act of war. Iran would not be capable of challenging an interdiction regime militarily, nor would it be expected to choose military confrontation with an international coalition. Retaliatory options would more likely be indirect and asymmetric, perhaps involving a renewal of attacks on American targets in the Middle East via proxies and attempts to undermine U.S. efforts in Iraq and Afghanistan.

Option 2: Military Force

Though rarely openly mentioned, the military option has been contemplated, primarily by Israeli decision-makers, who are unwilling to accept the prospect of a nuclear Iran and prone to draw a parallel with the situation in which they conducted their 1981 raid on Iraq's nuclear reactor.

Limited Force: The Osirak Precedent. On 7 June 1981, fourteen Israeli Air Force jets attacked a French-built Iraqi reactor at Osirak.¹⁷⁸ The raid, which Israel had planned since mid-1979, was a success. The jets achieved total surprise and inflicted devastating damage to the facility,¹⁷⁹ setting Iraq's nuclear program back by several years. U.S. forces executed a much larger series of strikes against suspected Iraqi WMD facilities in 1998, in an operation code-named "Desert Fox", although the degree of success is unclear.¹⁸⁰

The U.S. and its allies could consider a similar raid, on a somewhat larger scale, aimed at disrupting the

¹⁷⁸ See S. Nakdimon, *First Strike* (New York, 1987); U. Bar-Joseph, M. Handel, and A. Perlmutter, *Two Minutes Over Baghdad* (London, 2002).

¹⁷⁹ The Israeli raid was not the first attempt to bomb the Iraqi nuclear complex; Iranian aircraft struck the facility on 30 September 1980 but failed to inflict any appreciable damage. Rebecca Grant, "Osirak and Beyond", *Air Force Magazine*, Vol. 85, N°8, August 2002. Nakdimon claims an earlier Iranian air strike took place on 27 September 1980. Nakdimon, op. cit., p. 155. Other means may have been used as well; reactor components were sabotaged in France prior to their shipment to Iraq, and the head of the Iraqi nuclear program was assassinated. In January 1981, Iraqi security services reportedly prevented two attacks by groups of Iraqi Shiites on the living quarters of foreign staff working at the al-Tuweitha complex. Ibid., pp.181-182.

¹⁸⁰ On Desert Fox, see www.defenselink.mil/specials/desert_fox/. While the strike was announced as being directed at Iraqi WMD, it was apparently also intended to destabilise the Iraqi regime by attacking important individuals in the ruling elite as well as facilities used by the Republican Guard. See D. Priest and B. Graham, "Air Strikes Took a Toll on Saddam, U.S. Says", *The Washington Post*, 9 January 1999.

¹⁷⁷ The Madrid Initiative was announced by President Bush on 31 May 2003. It has been endorsed by Canada, France, Germany, Italy, Japan, Poland, The Netherlands, Portugal, Spain and Australia. Significantly, it would also permit the inspection of aircraft, a crucial point in regard to Iran's program. See "Target Iran – Blockade", available at www.globalsecurity.org/military/iran-blockade.htm.

progress of Iran's nuclear program and prolonging by many years the time that would be required to build a bomb. This arguably could give the international community enough time to mount a campaign to woo Tehran away from the nuclear option, or to engage in an effort to change the regime in Iran.

But a pre-emptive strike would present high risks and offer uncertain reward. Iran's ability to respond through conventional military means is virtually non-existent; it could, however, take steps to destabilise the situation in Afghanistan, Iraq or elsewhere in the Middle East and sponsor terrorist activities by allied groups.¹⁸¹ The danger of regional escalation is considerable. A strike would be technically complex, having to hit a large number of targets more or less simultaneously in order to maximise the damage inflicted while minimising risk to the attacking forces.¹⁸² Nor does the performance of Western intelligence with respect to Iraqi and North Korean WMD programs inspire great confidence regarding their ability to determine the location and extent of Iran's nuclear facilities. Based on this intelligence, the most important facilities for the purposes of nuclear device production would appear to be the 1000 MW power plant at Bushehr, the newly discovered uranium enrichment plant at Natanz, the Kalaye power plant in Tehran, and the heavy water facility at Arak.¹⁸³

But according to at least one European diplomat interviewed by ICG, "our nuclear experts say the intelligence we have is insubstantial. They could be building sites that we really don't know about".¹⁸⁴

Politically, a raid also could have a backlash effect, provoking a closing of the ranks around the regime and alienating many who currently oppose it. A raid in which some Iranians lost their lives or suffered injuries, as would be likely, might bolster nationalist sentiment in favour of the nuclear program, thereby tilting the internal debate.

Ultimately, while a raid could delay Iran's progress, the delay would risk being of relatively short duration. Iraq was unable to reconstruct Osirak rapidly because its resources were devoted almost entirely to the war against Iran; even then, its nuclear program on the eve of the 1991 Gulf War was significantly more advanced than ten years earlier. Present-day Iran does not confront a similar drain on its resources, and a strike in all likelihood would redouble its determination to move forward.

¹⁸¹ Iran's Defence Minister suggested as much: "If Israel undertook any military action against Iran, it would be exposed to serious damage, which no one can ever imagine....Actions will speak", interview with Aljazeera, 5 February 2002.

¹⁸² Although Iran's air defence system was largely in ruins by the end of the war with Iraq, it has sought to rebuild its capabilities with an eye towards defending its nuclear facilities, in particular from strikes by manned aircraft using gravity bombs as well as stand off precision-guided munitions. Iran has sought to purchase highly sophisticated Russian air-defence missiles, including the S-300 (an analogue to the U.S. Patriot capable of striking aircraft at ranges of up to 100 miles as well as intercepting slower types of ballistic missiles upon re-entry) and the Tor-M1 and MIT, a fast-reaction defensive system capable of intercepting low-flying aircraft and cruise missiles. A preliminary agreement under which Russia would provide Iran with S-300 systems and train up to 100 personnel in their use was signed in December 2000, D. Fulghum, "Iran Specifies New Weapons Mix", *Aviation Week & Space Technology*, Vol.154, N°13, 26 March 2001.

¹⁸³ "Target Iran – Air Strikes", at www.globalsecurity.org/military/ops/iran-strikes.htm; M. Rajkumar, "Understanding the IAEA Report on Iran", Carnegie Analysis, 19 June 2003. Available at www.ceip.org/files/nonprolif/templates/article.asp?NewsID=4958; M. Breit, "Iran's Natanz Facility",

Carnegie Analysis, 2 May 2003. Available at www.ceip.org/files/nonprolif/templates/article.asp?NewsID=4749.

¹⁸⁴ ICG interview, Tehran, July 2003.

VII. CONCLUSION

There is little doubt that a sustainable negotiated solution to the Iranian nuclear impasse is preferable to any alternative. The construction of an Iranian bomb would exacerbate tensions in an already highly charged and volatile region. A nuclear-armed Iran could lead neighbours, including Turkey, Egypt and Saudi Arabia, to review their own nuclear stances. The combination of an Iranian bomb and Iran's newly developed longer-range missile, the *Shahab-3*, could be perceived by Israel as a threat necessitating a military response.

An Iranian bomb also could inflict a fatal blow to the nuclear non-proliferation regime, which has been badly bruised during the last decade. The 1990s have seen nuclear detonations in India and Pakistan; a strong initial response by some members of the international community was quickly followed by de facto acceptance of the new nuclear powers. The 1990s also witnessed an allegedly successful bomb development effort in North Korea and an active and aggressive program in Iraq that was stopped less by the treaty and its inspectors than by armed intervention on the part of the U.S. and its allies during the 1991 Gulf War. Both Iraq and North Korea engaged in bomb-building programs while signatories to the NPT; Iraqi officials reportedly decided to stay in the NPT after concluding that its inspection requirements did not pose any hindrance to their quest for a nuclear weapon.¹⁸⁵

If the goal of Iran's nuclear program is indeed a weapon, use of force against it might delay achievement for some years. But the odds are that it would not end it; Iran likely would survive with a weaker program but an enhanced determination to rebuild and complete it. A strike, most probably by Israel or the U.S., also would risk setting back prospects for domestic change in Iran by rallying support for the regime while triggering deadly terrorist responses against U.S. targets in the Middle East and elsewhere. Finally, it almost certainly would fracture the international community, breaking the existing broad but fragile consensus and allowing Iran to play one power against another.

As described in this report, a successful diplomatic initiative would need to address two competing but legitimate preoccupations: Iran's right to develop a peaceful nuclear program and the U.S. and wider international fear that such a program rapidly could be diverted for military purposes. The NPT does not on its own offer a satisfactory way out; its regime assumes the good faith of the host state and is overly dependent on it for information. Under its provisions, countries can go too far down the road of nuclear militarisation without the application of any brakes.

As a result, any viable compromise will require Iran to accept extensive supervision and inspection exceeding what is required by the NPT and even the Additional Protocol, and the U.S. will need to accept greater Iranian nuclear capacity than it currently appears comfortable with. At the same time, it should be made absolutely clear that any violation by Iran of its commitment to greater transparency and international monitoring would quickly be followed by the imposition of appropriate sanctions by the Security Council.

Assuming, therefore, that Iran takes all steps to comply with the 31 October 2003 deadline, a realistic albeit not ideal agreement would allow Iran to engage in the array of nuclear efforts, including uranium enrichment. These activities, however, would be subject to the presence of international monitors at all nuclear sites and research centres and, in the case of some facilities, possibly even to joint Iranian/international management and control. Iran also would take confidence building steps, notably by placing limits on its missile capacity. At the same time, European countries would provide Iran with nuclear technology and material for civilian purposes, and the U.S. would commit itself not to interfere with such imports and pledge not to use force against Iran. The convening of a regional security forum would begin to address some of Iran's security concerns.

This deal, or at least elements of it, may be beyond reach at the present time. Washington's suspicions may be so strong as to render unacceptable even a closely supervised and inspected Iranian program. Tehran's security, economic or nationalistic impulses for seeking a nuclear capacity may be so powerful as to be impossible to curb. Finally, debilitating internal divisions in both capitals may be so deep as to incapacitate their ability to achieve unity of purpose and engage in creative deal making.

¹⁸⁵ L. Pingel, "Forcible Repentance: Hostile Nuclear Proliferants and the Nonproliferation Regime – An Interview with Leonard S. Spector", *The Nonproliferation Review*, Fall 1993, p. 28.

Nevertheless, the stakes are sufficiently high to dictate a serious effort to explore the possibilities.

The juxtaposition of the North Korean and Iranian cases has broader implications. The severely eroded non-proliferation regime is in danger of becoming irrelevant, a claim frequently voiced in the U.S. both within and without the administration. An urgent effort should be mounted to revamp this regime to confront the problem of proliferation and, most importantly, of non-compliance by signatories. Mohamed El-Baradei, the head of the IAEA, has acknowledged the limitation of the current non-proliferation regime, pointing out that “there is nothing illicit in a non-nuclear weapon state having enrichment or reprocessing technology, or possessing weapons-grade nuclear material”.¹⁸⁶ Some of the revisions to the NPT he advocates – such as that civilian nuclear activity with potential military use be restricted “exclusively to facilities under multinational control”¹⁸⁷ – would generalise solutions put forward in this report in the specific case of Iran.¹⁸⁸

A more modest endeavour would be to revise the IAEA regime in order to improve the international community's ability to detect and acquire detailed knowledge about covert proliferation efforts worldwide. Intrusive inspections may well have to become the norm, notwithstanding concerns for state sovereignty. A revised regime also would give the IAEA stronger enforcement capacity, including by specifying the types and gradations of sanctions to be applied to violators. Beyond that, reflection needs to commence on imposing credible conditions before a country can invoke the NPT's breakout provision and on imposing sanctions if such a provision is illegitimately used.

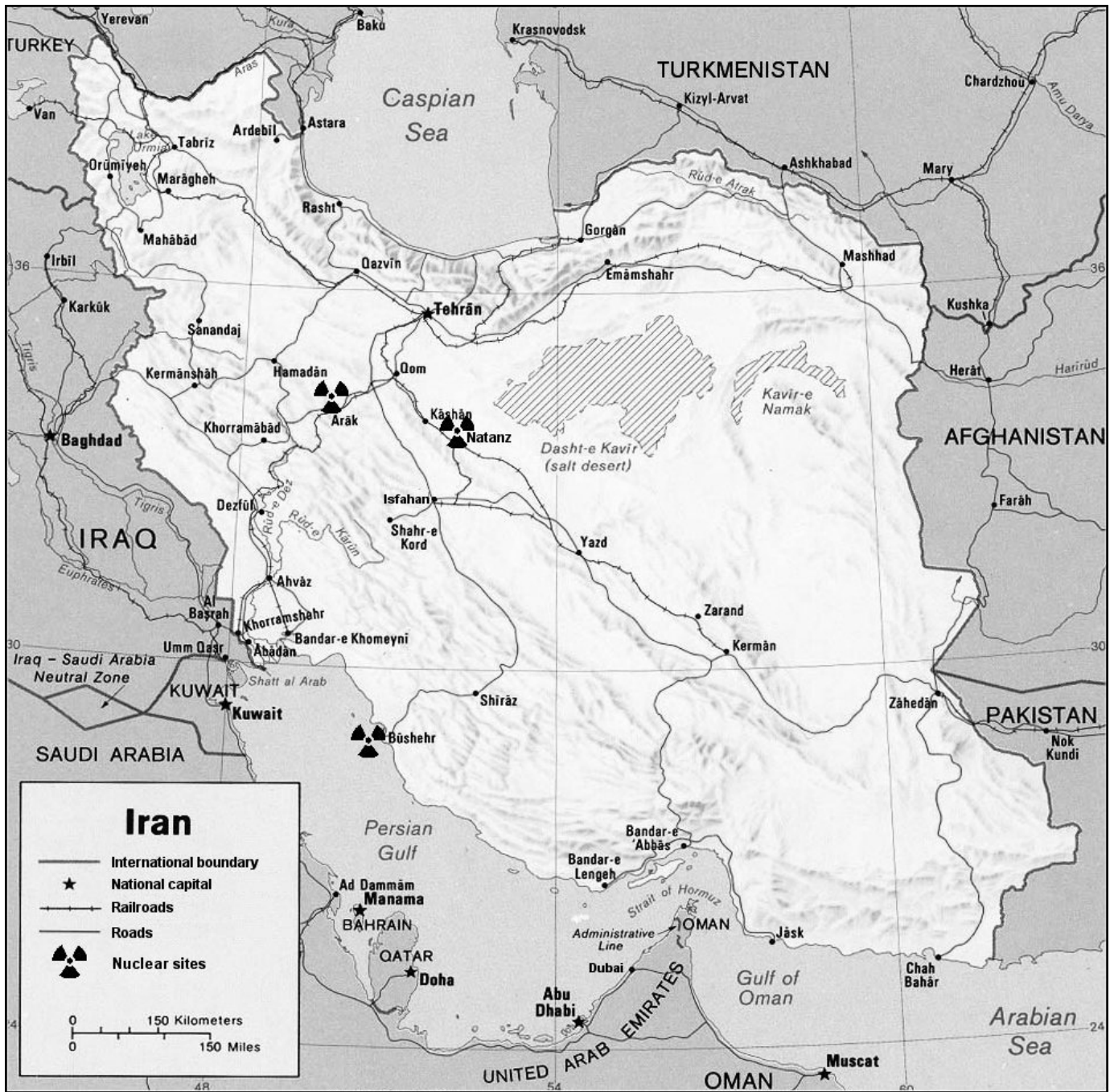
Amman/Brussels, 27 October 2003

¹⁸⁶ Mohamed El-Baradei, “Towards a Safer World”, *The Economist*, 16 October 2003.

¹⁸⁷ Ibid.

¹⁸⁸ Among El-Baradei's other suggestions are the deployment of “nuclear-energy systems...that, by design, avoid the use of material that may be applied directly to making nuclear weapons” and the establishment of “multinational approaches to the management and disposal of spent fuel and radioactive waste.” Ibid.

APPENDIX A MAP OF IRAN



Adapted from version of The General Libraries, The University of Texas at Austin.

APPENDIX B

SAFEGUARDS TO PREVENT NUCLEAR PROLIFERATION¹⁸⁹

The NPT Origins and Objectives

While its limitations have become increasingly apparent in the past decade such that there is now a need for its regime to be reviewed and strengthened, the successful conclusion, in 1968, of negotiations on the NPT was a landmark in the history of non-proliferation. After coming into force in 1970, its indefinite extension in May 1995 was another. At present, 187 states are parties. These include all five declared Nuclear Weapons States (NWSs) at the time the treaty was concluded: China, France, the Russian Federation, the UK and the U.S.

The NPT's main objectives are to stop the further spread of nuclear weapons, to provide security for states that have renounced the nuclear option, to encourage international cooperation in the peaceful uses of nuclear energy, and to pursue negotiations in good faith towards nuclear disarmament leading to the eventual elimination of nuclear weapons.

The International Atomic Energy Agency

The IAEA was set up by unanimous resolution of the United Nations in 1957 to help nations develop nuclear energy for peaceful purposes. Allied to this role is the administration of safeguards arrangements. Those are meant to provide assurance to the international community that individual countries are honouring their treaty commitments to use nuclear materials and facilities exclusively for peaceful purposes.

The IAEA undertakes regular inspections of civilian nuclear facilities to verify the accuracy of documentation supplied to it. The agency checks inventories and undertakes sampling and analysis of materials. Safeguards are complemented by controls on the export of sensitive technology from countries such as UK and U.S. through voluntary bodies such as the Nuclear Suppliers' Group.

Scope of safeguards

Traditional safeguards are arrangements to account for and control the use of nuclear materials. This verification is a key element in the international system intended to ensure that uranium in particular is used only for peaceful purposes.

Parties to the NPT agree to accept technical safeguards measures applied by the IAEA. These require that operators of nuclear facilities maintain and declare detailed accounting records of all movements and transactions involving nuclear material. Over 550 facilities and several hundred other locations are subject to regular inspection, and their records and nuclear material to audit. Inspections by the IAEA are complemented by other measures such as surveillance cameras and instrumentation.

The aim of traditional IAEA safeguards is to deter the diversion of nuclear material from peaceful use by maximising the risk of early detection. At a broader level they are meant to provide assurance to the international community that countries are honouring their treaty commitments to use nuclear materials and facilities exclusively for peaceful purposes.

The inspections act as an alert system, providing a warning of the possible diversion of nuclear material from peaceful activities. The system relies on:

¹⁸⁹ This brief account of the role of the IAEA, NPT, Additional Protocol and existing international safeguards regimes draws heavily upon the Uranium Information Centre's Nuclear Issues Briefing Paper 5, October 2003, <http://www.uic.com.au/nip05.htm>.

- ❑ **Material accountability** – tracking all inward and outward transfers and the flow of materials in any nuclear facility. This includes sampling and analysis of nuclear material, on-site inspections, and review and verification of operating records.
- ❑ **Physical security** – restricting access to nuclear materials at the site of use.
- ❑ **Containment and surveillance** – use of seals, automatic cameras and other instruments to detect unreported movement or tampering with nuclear materials, as well as spot checks on-site.

All NPT non-weapons states must accept these full-scope safeguards. The terms of the NPT cannot be enforced by the IAEA itself, and they depend for effectiveness on the good faith of the member states. Nor can nations be forced to sign the treaty. As shown in Iraq and North Korea, however, safeguards can sometimes be backed up by reasonably effective diplomatic, political, economic and military measures.

Iraq and North Korea illustrate both some of the strengths and some of the weaknesses of international safeguards. While accepting safeguards at declared facilities, Iraq had set up elaborate equipment elsewhere in an attempt to enrich uranium to weapons grade. North Korea attempted to use research reactors (not commercial electricity-generating reactors) and a reprocessing plant to produce some weapons-grade plutonium.

The weakness of the NPT regime lay in the fact that no obvious diversion of material was involved. The uranium used as fuel probably came from indigenous sources, and the nuclear facilities concerned were built by the countries themselves without being declared or placed under safeguards arrangements. Iraq, as an NPT party, was obliged to declare all facilities but did not do so. In North Korea, the activities concerned took place before the conclusion of its NPT safeguards agreement.

So, while traditional safeguards easily verified the correctness of formal declarations by suspect states, since the 1990s attention has been turning increasingly to what might not have been declared, outside the known materials flows and facilities.

Undeclared nuclear activities

In 1993 a program was initiated to strengthen and extend the classical safeguards system, and a model protocol was agreed by the IAEA Board of Governors in 1997. The measures represented a degree of improvement in the IAEA's ability to detect undeclared nuclear activities, including those with no connection to the civilian fuel cycle.

Innovations were of two kinds. Some could be implemented on the basis of the IAEA's existing legal authority through safeguards agreements and inspections. Others required further legal authority to be conferred through an Additional Protocol that could be agreed by a non-weapons state with the IAEA as a supplement to any existing comprehensive safeguards agreement. Weapons states have agreed to accept the principles of the model Additional Protocol.

Key elements of the model Additional Protocol:

- ❑ The IAEA is to be given considerably more information on nuclear and nuclear-related activities, including research and development (R & D), production of uranium and thorium (regardless of whether it is traded) and nuclear-related imports and exports.
- ❑ IAEA inspectors will have greater rights of access. This will include access to any suspect location; it can be at short notice (e.g. two hours); and the IAEA can deploy environmental sampling and remote monitoring techniques to detect illicit activities.
- ❑ States must streamline administrative procedures so that IAEA inspectors get automatic visa renewal and can communicate more readily with IAEA headquarters.

All these elements focus on nuclear materials. They enhance, though they cannot perfect, the IAEA's ability to provide assurances that all nuclear activities and material in the country concerned have been declared for safeguards purposes.

Further evolution of safeguards is towards evaluation of each state, taking account of its particular situation and the kind of nuclear materials it has. This will involve greater judgement on the part of IAEA and the development of effective methodologies that reassure NPT States.

Limitations of safeguards

The greatest risk of nuclear weapons proliferation lies with countries that have not joined the NPT and have significant unsafeguarded nuclear activities. India, Pakistan and Israel are in this category and indeed are widely believed to have acquired nuclear weapons. While safeguards apply to some of their activities, others remain beyond scrutiny.

A further concern is that countries may develop various sensitive nuclear fuel cycle facilities and research reactors under full safeguards and then subsequently opt out of the NPT. Bilateral agreements such as insisted upon by Australia and Canada for sale of uranium attempt to address this by including fallback provisions, but many countries are outside the scope of such agreements. If a nuclear-capable country does leave the NPT, it is likely to be reported by the IAEA to the UN Security Council, just as if it were in breach of its safeguards agreement.

The Additional Protocol, once it is widely in force (currently 54 states have signed it but only 18 have ratified it), will provide some assurance that there are no undeclared nuclear materials or activities in the states concerned. This will be a step forward in preventing nuclear proliferation, albeit an insufficient one.¹⁹⁰

Other IAEA developments

In May 1995, NPT parties reaffirmed their commitment to a Fissile Materials Cut-off Treaty to prohibit the production of any further fissile material for weapons. This aims to complement the Comprehensive Test Ban Treaty agreed in 1996, to codify commitments made by the U.S., UK, France and Russia to cease production of weapons material, and to put China under a similar limitation.¹⁹¹ It also is hoped that this treaty will put more pressure on Israel, India and Pakistan to agree to international verification.

Another initiative relates to plutonium (Pu) and spent fuel. For uranium, safeguards take account of its nature: natural, depleted, low-enriched or high-enriched (above 20 per cent U-235) and the corresponding degree of concern regarding proliferation. A similarly differentiated approach is being considered for Pu. Two or three categories are possible: degraded Pu (e.g. in high-burnup fuel), low-grade Pu (e.g. separated from spent fuel of normal burnup) and high-grade Pu (e.g. from weapons or low-burnup fuel). The first two correspond to what is generally known as reactor-grade Pu, sometimes defined as having more than 19 per cent non-fissile isotopes.

Additional arrangements

There are several other treaties and arrangements designed to reduce the risk of a civilian nuclear power contributing to weapons proliferation.

Implementation of IAEA safeguards in the thirteen non-nuclear weapon states of the EU is governed by a Verification Agreement between the country concerned, the European Atomic Energy Community (EURATOM) and the IAEA. Safeguards activities are carried out jointly by the IAEA and EURATOM. A revision to earlier arrangements, the New Partnership Approach (NPA), was agreed in April 1992. It enables the IAEA itself to deploy more of its resources in member states where independent regional safeguards systems are not in place.

Shortly after the entry into force of the NPT, multilateral consultations on nuclear export controls led to the establishment of two separate mechanisms for dealing with nuclear exports: the Zangger Committee in 1971 and the Nuclear Suppliers Group (NSG) in 1975.

¹⁹⁰ As noted above, Mohamed El-Baradei, Director General of the IAEA, has recently discussed the shortcomings of the nuclear non-proliferation regime and possibilities for improvement in "Towards a Safer World", *The Economist*, 16 October 2003.

¹⁹¹ The U.S. Senate rejected ratification of the Comprehensive Test Ban treaty itself in 1999, however.

The Zangger Committee, also known as the Non-Proliferation Treaty Exporters Committee, was set up to consider how procedures for export of nuclear material and equipment related to NPT commitments. In August 1974 the committee produced a trigger list of items that would require the application of IAEA safeguards if exported to a non-nuclear weapons state not a party to the NPT. The trigger list is regularly updated. The Zangger Committee now has 31 member states.

The NSG, also known as the London Group or London Suppliers Group, was set up in 1975 after India exploded its first nuclear device. The main reason for the group's formation was to bring in France, a major nuclear supplier nation which was not then party to the NPT. It included both members and non-members of the Zangger Committee. The group communicated its guidelines, essentially a set of export rules, to the IAEA in 1978. These were to ensure that transfers of nuclear material or equipment would not be diverted to unsafeguarded nuclear fuel cycle or nuclear explosive activities, and formal government assurances to this effect were required from recipients. The Guidelines also recognised the need for physical protection measures in the transfer of sensitive facilities, technology and weapons-usable materials, and strengthened retransfer provisions. The NSG began with seven members – the U.S., the former USSR, the UK, France, Germany, Canada and Japan – and now has 35.