

Nuclear Threat Reduction CAMPAIGN

A program of Vietnam Veterans of America Foundation
and The Justice Project

IRAN

I. The Issues

Background

In the mid-1960s, during the Shah's reign, Iran initiated a nuclear program—ostensibly for purposes of research and power generation, although there has been suspicion that the Shah took steps in the direction of weapons development.¹ By the time the Islamic revolution succeeded in 1979, the construction of two reactors at Bushehr by a West German contractor was well underway. Almost immediately after the revolution, the nuclear programs were cancelled; and Iraqi bombs destroyed the Bushehr site during the eight-year Iran-Iraq war.²

In 1984, the Ayatollah Khomeini's government resurrected the nuclear program and reportedly began covert activities for a nuclear weapons program.³

As a non-nuclear-weapons-state (NNWS) party to the Nuclear Nonproliferation Treaty (NPT), Iran signed a safeguard agreement, under which it is obligated to keep the International Atomic Energy Agency (IAEA) fully informed of key aspects of its nuclear programs. Such agreements are intended to allow the agency to monitor NNWSs' activities to ensure that they do not divert their nuclear materials and technology from peaceful uses to nuclear weapons purposes. However, for many years, Iran denied and concealed major aspects of its nuclear program.

It is unclear how close Iran is to acquiring nuclear weapons. Estimates vary from 2-3 years to "within the decade."⁴

However, Iranian leaders have frequently professed disdain for nuclear weapons on religious grounds, describing them as contrary to Islamic teachings. For example, in May 2003, a deputy foreign minister stated, "[W]e consider the acquiring, development, and use of nuclear weapons inhuman, immoral, illegal and against our basic principles."⁵ And on July 8, 2004, Foreign Minister Kamal Kharazi stated, "We consider using biological, chemical and nuclear weapons as an act of *haram* [forbidden in the Koran]."⁶ This, of course, raises the obvious question of why Iran has gone to such lengths, in contravention of its NPT obligations, to conceal nuclear activities that could lead to weapons production.

Current Issues

In August 2002, an exiled Iranian opposition group charged that two secret nuclear sites were under construction in Iran: a gas-centrifuge uranium enrichment facility in Natanz, the concealment of which was at least a technical violation of Iran's safeguard agreement, and a heavy water research reactor near Arak, which did not involve a violation.⁷

The IAEA's current course of investigation into Iran's concealment of nuclear activities began in follow-up to the exile group's revelations. In February 2003, Iran acknowledged having concealed its centrifuge enrichment program, and IAEA inspections of various sites in Iran began.

Also in February 2003, Iran announced a plan to develop a nuclear energy program using entirely domestic resources. This raised serious concern because Iran would then be able to independently operate a complete nuclear fuel cycle, which could enable it to produce materials—highly enriched uranium (HEU) and separated plutonium—from which nuclear weapons could be built.

On September 12, 2003, the IAEA Board of Governors adopted a resolution⁸ noting Iran's infractions of its safeguard agreement and of actions that needed to be taken to resolve the issues that had been raised. The IAEA's major concerns included:

- the presence of HEU in environmental samples taken at Natanz;
- Iran's having introduced nuclear material into its pilot facility in Natanz despite the IAEA's earlier request that it not do so; and
- Iran's failure to enable the IAEA to determine that Iran had submitted all nuclear material within its borders to IAEA safeguards and was not engaged in undeclared nuclear activities.

Thereafter, three European nations, the U.K., France, and Germany, engaged Iran in discussions that resulted in an October 21, 2003, agreement for resolving the nuclear issues through the IAEA.⁹ For its part, Iran disavowed any place for nuclear weapons in its defense doctrine and agreed:

- “to engage in full cooperation with the IAEA to address and resolve through full transparency all requirements and outstanding issues of the agency and clarify and correct any possible failures and deficiencies within the IAEA”;
- to sign the Additional Protocol (which requires keeping the IAEA more fully informed and provides for more intrusive inspections), begin proceedings to ratify the protocol, and act in accordance its provisions in advance of ratification; and
- “voluntarily to suspend all uranium enrichment and processing activities as defined by the IAEA.”

In return, the three European countries agreed that:

- “full implementation” of Iran's agreement, as “confirmed by the IAEA's director general, should enable the immediate situation to be resolved by the IAEA board” and would “open the way to a dialogue on a basis for longer term cooperation”;

- “[o]nce international concerns ... are fully resolved Iran could expect easier access to modern technology and supplies in a range of areas”; and
- the three countries “will co-operate with Iran to promote security and stability in the region including the establishment of a zone free of weapons of mass destruction in the Middle East ...”

This agreement produced considerable optimism that Iran’s cooperation with the IAEA would lead to an amicable resolution of the concerns surrounding Iran’s nuclear programs. As discussed below, the agreement has not produced that result.

1. Uranium-Enrichment Activities

Iran actually began work on centrifuge enrichment of uranium as far back as 1985.¹⁰ Whether this was or is intended to be part of a nuclear energy or nuclear weapons program, or both, is unclear.¹¹ However, the dangers here are twofold: first, if Iran were to withdraw from the NPT, it could use the equipment to begin producing HEU for nuclear weapons; and second, even if Iran remained a party to the NPT, it might try to cheat by using scientists knowledgeable in the centrifuge process to operate the same type of equipment to produce HEU at a secret location.

Iran’s centrifuge uranium-enrichment program includes two facilities in Natanz.¹² One is a pilot plant with about 1,000 P-1 centrifuges that, when completed, will be able annually to produce 10-12 kilograms of HEU, almost enough for one nuclear weapon.¹³ The other is a large-scale commercial plant, comprising three large underground structures, that is scheduled to begin accepting centrifuges in 2005. This plant could produce 400-500 kilograms of HEU annually.

Iran officially introduced uranium hexafluoride—the gaseous form of uranium that can be enriched by centrifuges—into the pilot plant and began testing a small set of centrifuges in the summer of 2003.¹⁴ When the IAEA tested environmental samples it had taken from the centrifuges, the results showed traces of both HEU and LEU. Iran claims that it never enriched uranium beyond 1.2% U-235, a very low level of enrichment and attributed the presence of uranium enriched to higher levels to contamination of centrifuge components before they were imported.

An IAEA Director General’s investigation report dated September 1, 2004, stated that “it appears plausible” that Iran’s contention that the HEU contamination did not result from enrichment activities in Iran is true.¹⁵ However, further investigation of the contamination issues is necessary before the IAEA can reach a final conclusion.

Regarding Iran’s laser enrichment programs, Iran acknowledged in October 2003, that it had begun work on a laser enrichment program in the 1970s and, for the last 12 years, has been developing a program based on two techniques: atomic vapor laser isotope separation and molecular isotope separation.¹⁶ The primary facility was at Lashkar Ab’ad, where a pilot plant was established in 2000 and experiments were conducted between October 2002 and January 2003 using 22 kilograms of natural

uranium metal to produce small amounts (milligrams) of reactor grade enriched uranium (3-4 % U235). This uranium was part of a previously undeclared 50-kilogram shipment that was suspected to have come from the Soviet Union in 1993. Iranian authorities claim that all equipment at Lashkar Ab'ad was dismantled in May 2003, and transferred to a storage facility at Karaj.

On June 27, 2004, Iran's foreign ministry announced¹⁷ that Iran would resume building centrifuges the next day and that Iran welcomed international supervision of this manufacturing and remained committed to its suspension of uranium enrichment (thus glossing over the fact that last October it had promise to suspend "uranium enrichment ... activities as defined by the IAEA").

In a September 18 resolution, the IAEA Board of Governors urged Iran to "immediately suspend all enrichment-related activities."

Iran quickly rejected the Board's plea. On September 21, Iran's President Mohammad Khatami declared, "We've made our choice: yes to peaceful nuclear technology, no to atomic weapons."¹⁸ On the same day, the head of Iran's Atomic Energy Organization announced that it had begun the conversion of about 40 tons of uranium oxide, known as "yellowcake," into uranium hexafluoride gas. That is the gas that can be inserted into centrifuges to produce LEU to fuel power plants or, if the centrifuge process is continued long enough, HEU for nuclear weapons.

2. The Reactor Construction Project at Bushehr

In 1995 Russia signed an agreement with Iran to assist with completing the construction of a large light water reactor in Bushehr.¹⁹ Russia also agreed to supply the nuclear fuel for this reactor. The United States has long vehemently opposed this Iran-Russia arrangement because of concerns that, since Iran's huge oil reserves leave it with no need for nuclear energy, the agreement is being used as a cover for the transfer of nuclear technology and training that could support a weapons program.²⁰

Moreover, unless the uranium fuel for the reactor is continuously and strictly monitored by then IAEA, there is some risk that the plutonium in the spent fuel could be separated surreptitiously and then be used for the manufacture of a nuclear weapon. Russia has taken the position that it will only supply the fuel, LEU, under an arrangement whereby the spent fuel will be returned to it, leaving Iran with no material from the Bushehr project that it can use for nuclear weapons.

The Director General of the IAEA, Mohammed ElBaradei, citing the agreement on the spent fuel, stated on June 29, 2004, that the Bushehr reactor "is not ... of any concern on our part."²¹ However, it must be noted that, in the unlikely event that Iran were willing to risk strong reactions from Russia and the rest of the international community, it could repudiate that agreement after the LEU is placed in the reactor, withdraw from the NPT and eventually be able to separate plutonium from the spent fuel.

According to Under Secretary of State for Arms Control and Disarmament John R. Bolton, after several years of operation, Bushehr could make enough plutonium for more than 80 nuclear weapons.²²

According to a July 9, 2004, Agence France-Presse article, only final price and logistics negotiations are holding up the contract to provide the fuel for the Bushehr reactor; and with the completion of those negotiations, the reactor was expected to go on line in 2006.²³

Current Status

The Iranian picture remains murky and full of contradictory signs as to whether Iran intends to produce nuclear weapons. One thing is clear: if Iran develops a complete nuclear fuel cycle for power generation purposes, it will also have developed the ability to manufacture to produce the nuclear material necessary for such weapons.

The IAEA Director General concluded in a November 10, 2003, report that:

- Iran had a history of concealment of nuclear programs,
- its recent cooperation with the IAEA had been “limited and reactive,”
- information from Iran had been “slow in coming, changing and contradictory,” but
- since September 12, 2003, Iran had “shown active co-operation and openness .”²⁴

In response, Iran’s foreign minister asserted that Iran was committed to total nuclear transparency and would continue to cooperate with the IAEA.²⁵

Iran signed an Additional Protocol in December 2003, and has been complying with its terms; but the Iranian parliament, the Majlis, has still not ratified it. Moreover, Iran’s top nuclear negotiator has asserted that if the IAEA refers Iran’s nuclear activities to the UN Security Council, “Iran will stop implementing the additional protocol and will limit its cooperation with the IAEA.”²⁶

The IAEA has been very concerned that, over a long period, Iran’s declarations have been incomplete with respect to a wide range of significant matters. For example, in October 2003, Iran admitted that it had experimented with some safeguarded uranium that it had previously declared had been lost. However, after January 2004 inspections, the IAEA concluded, “given the size and capacity of the equipment used, the possibility cannot be excluded that larger quantities of nuclear material could have been involved than those declared by Iran.”²⁷ Also, in 1994, Iran imported drawings for more advanced, P-2 centrifuges. Iran now admits having P-2 centrifuges but claims that it produced them domestically. The IAEA is still, as of September 2004, investigating the origins of the P-2 components.

On June 18, 2004, the IAEA Board of Governors adopted a resolution that, although recognizing certain positive aspects of Iran’s responsiveness, “deplore[d] ... the

fact that, overall, ... Iran's cooperation has not been as full, timely and proactive as it should have been.”

Despite having promised in October 2003 to suspend “all” uranium enrichment activities, Iran resumed the production of centrifuges on June 27, 2004,²⁸ and later began converting uranium oxide into uranium hexafluoride gas, the material that can be enriched in the centrifuges²⁹—although it has indicated that it will not pump the gas into the centrifuges and begin actually enriching uranium.³⁰ This repudiation of the promised suspension raises serious concerns as to Iran's intentions and trustworthiness. On the other hand, Iran's declining to start the enrichment process itself suggests that it may yet be open to negotiation on the issue of whether it will actually undertake the operation of a complete fuel cycle.

Iran's chief nuclear negotiator, Hasan Rowhani, recently stated, “No [IAEA] resolution can impose an obligation on Iran to suspend activities. If there is a way, it will be the way of dialogue.” Also, noting talks with the U.S. regarding Afghanistan and Iraq in recent years, Mr. Rowhani, said, “If they [Americans] give up a policy of threat, we can consider dialogue with them.”

The IAEA Board of Governors has so far stopped short of concluding that Iran has “violated” its safeguard agreement, which would require a referral to the UN Security Council and General Assembly,³¹ and might preclude further IAEA efforts to work through the various issues and reach the conclusion that Iran has no nuclear weapons program.

Matters may come to a head at the IAEA Board of Governors' meeting on November 25, 2004. In its September 18 resolution, the Board declared that at that meeting, it will decide whether “further steps are appropriate in relation to” both Iran's safeguards agreement and the Board's requests that Iran suspend all enrichment-related activities and halt construction of a heavy-water research reactor.³² Thus, the Board could decide to refer Iran's nuclear program to the UN Security Council.

On the other hand, IAEA Director General ElBaradei has suggested that the opportunity still exists for a negotiated settlement producing a termination of Iran's enrichment activities,³³ and Iran has suggested that “dialogue” could elicit Iranian concessions.³⁴

However, the U.S. has given no indication that it is willing to enter discussions or negotiations with Iran, preferring to press for Security Council action.³⁵ But, even if the case does reach the Security Council, sanctions or other enforcement actions are not assured; nor is their desired effect—Iran relinquishing its efforts to develop a complete fuel cycle. In fact, the possibilities exist that if sanctions are imposed, Iran would continue to pursue uranium enrichment, withdraw from the NPT, and end IAEA surveillance of its nuclear activities. What seems to be lacking is a United States' strategy that has a realistic prospect of preventing Iran from obtaining the capability to produce nuclear weapons.

Recommendations for Resolving the Iran Problem

In light of Iran's long history of concealment and deception with regard to its nuclear activities, it is very hard to accept at face value Iran's insistence that it has no interest in a nuclear weapons program. Thus, many insist that Iran should not be permitted to develop a complete fuel cycle, which would entail the ability to enrich uranium and reprocess its spent fuel, because that would enable it to begin producing the materials that could be used to build nuclear weapons: HEU and separated plutonium. Moreover, they insist that Iran be required (or induced) to dismantle its existing uranium-enrichment facilities.

On the other hand, Iranians argue that, as a matter of law, they should be allowed to complete their construction of a complete fuel cycle once they have been found to be in compliance with their safeguard agreement.³⁶ They also contend that, under Article IV of the NPT, they should be eligible for the purchase and importation of nuclear technology from other NPT parties. Discrimination against them, they argue, violates the NPT and entails the application of a double standard. Moreover, Iran has invested billions of dollars in the development of the fuel cycle and this stake, together with national pride, will make it very difficult for them to relinquish their claim to the operation of the fuel cycle—even if they had no intention to develop a nuclear weapons program. As to the need for an oil-rich country to develop an alternate source of energy, Iran contends that by meeting some of its domestic energy requirements through nuclear power, it can maximize its exports of oil and gas.

If Iran were to manufacture nuclear weapons—either secretly while remaining a party to the NPT or after withdrawing from the treaty—the repercussions would constitute a severe blow to the nonproliferation regime and could increase the “long-term prospects for nuclear terrorism or nuclear war in the Middle East.”³⁷

A recent draft report of the Carnegie Institute for International Peace³⁸ suggests a system of incentives and potential punishments (carrots and sticks) as a way to convince Iran not to acquire the means to produce weapon-usable HEU or plutonium. First, they recommend that the U.K., France and Germany spell out precisely what Iran should do to suspend fuel-cycle activities—*e.g.*, halt the fabrication of centrifuges and the purchase of any enrichment-related technologies—and then to dismantle the facilities involved.

Second, the European Union, with support from the United States and the other states on the IAEA Board of Governors, should specify what benefits Iran would receive for giving up the acquisition of nuclear fuel production capabilities. These benefits should include:

- guarantees of both a commercially viable supply of LEU for its nuclear reactors and the removal and disposal of spent fuel;
- increased favorable access to trade with the EU; and
- cessation of U.S. regime-change efforts.

Third, on the cost side, the U.S., U.K., and France should seek Russian and Chinese cooperation in privately warning Iran that they are prepared to vote in the Security Council for sanctions if Iran refuses to completely suspend and eliminate fuel cycle capabilities. Also, participants in the Proliferation Security Initiative (see earlier paper in this series) should warn Iran that they will step up efforts to prevent Iran from receiving or exporting nuclear technology and material.

The Carnegie recommendations also include buttressing these Iran-specific initiatives with a more general nonproliferation strategy that includes:

- Clarifying that all states should suspend nuclear cooperation with a state as to which the IAEA cannot give assurance that its nuclear program is peaceful.
- A Security Council resolution or resolutions making clear that if a state withdraws from the NPT, it remains responsible for violations committed while still a party and, whether or not it committed any violations, may no longer make use of and must return any nuclear materials, facilities, equipment or technology that it had acquired from another country.
- Bilateral contractual arrangements between nuclear technology suppliers and recipients to the same effect.
- Establishing an international general rule that no new uranium enrichment or plutonium separation facilities may be established on a national basis in non-nuclear-weapons states.
- Pursuit by the European Union, the United States, and other nuclear weapons states of a Middle East zone free of WMD.

Many others have proposed varying formulations of the strategy and tactics to deter or prevent Iran from developing an indigenous nuclear fuel cycle and insist that Iran verifiably dismantle the facilities it already has for enriching uranium and reprocessing spent fuel. And some have noted the great difficulties that must be overcome in developing the middle ground for a lasting solution. For example, the huge stake—in terms of both finances and national pride—that Iran has in its nuclear programs will make it very difficult for it to relinquish its fuel-cycle ambitions in response to demands from Europe and the U.S. In fact, Iranian Foreign Minister Kamal Kharrazi has recently said Iran would not stop development of the cycle.³⁹ At the same time, the benefits that might be necessary to induce Iran to do so may be impossible to extend while Iran is still believed to be sponsoring Hezbollah or other terrorist or anti-Israeli organizations.

The answer might lie either in bargaining that is focused on the Iran-specific nuclear issues and ignores a host of other issues or in the fashioning of a grand bargain involving larger issues such as the possibility of a WMD- or nuclear-free zone in the Middle East or resolution of the Israeli-Palestinian dispute.⁴⁰ A third alternative, which the Bush administration seems to favor, the imposition of sanctions, will probably come about only if Russia, France, the U.K., and China become so frustrated by Iran's tactics that they would support, or at least not veto, Security Council action declaring an NPT violation and directing such punishment.

Whether strong international efforts to convince Iran to dismantle its fuel cycle facilities will either be made or can succeed is far from clear. But the stakes—in terms of both preserving a viable international nonproliferation regime and of preventing Iranian fissile materials from possibly falling into terrorists’ hands—are extremely high and the attempt through a range of multilateral diplomatic efforts to prevent the emergence of another Middle East nuclear-weapons power clearly would be well worth the effort.

Ultimately, any effort to dissuade Iran from pursuing nuclear ambitions may be futile if Iran’s security vulnerabilities are not addressed, especially if Iran is being motivated by a perceived need to have a nuclear deterrent. Knowing whether that is the case and dealing effectively with it represent major challenges; and the latter will obviously require face-to-face negotiations with the United States.

II. Recent Legislation

- The Foreign Operations, Export Financing, and Related Programs Appropriations, 2004 (division D of the Consolidated Appropriations Act, 2004; Public Law 108-199) contains the following provision in Title II—Bilateral Economic Assistance:
 - Under the heading “Assistance for the Independent States of the Former Soviet Union,” subsection (f) requires, with certain exceptions, withholding 60% of the funds appropriated under that heading and allocated to Russia until the President certifies in writing that Russia is (1) no longer providing Iran with assistance in developing either a nuclear reactor, or related facilities or programs, or ballistic missiles, and (2) providing full access to international non-government organizations providing humanitarian relief to refugees and displaced persons in Chechnya.
 - Section 507, prohibits the use of funds appropriated in this Act for direct assistance to Iran, as well Cuba, Libya, North Korea, and Syria.

Note: Similar provisions have appeared in several earlier corresponding annual appropriations acts.

In the 108th Congress, three resolutions were introduced to express concerns regarding Iran’s development of the means to produce nuclear weapons and Iran’s failure to fulfill its obligations under its NPT safeguards agreement with the IAEA:

- H. Con. Res. 398, introduced by Rep. Henry Hyde (R-IL) on March 25, 2004, cosponsored by 51, and passed by the House on May 6, 2004.
- S. Con. Res. 81, introduced on November 13, 2003, by Sen. Dianne Feinstein (D-CA), and cosponsored by 69.
- H. Con. Res. 332, introduced by Rep. Curt Weldon (R-PA) on November 20, 2003, and cosponsored by 230.

The following resolutions are also relevant to Iran's nuclear programs:

- H. Con. Res. 217, introduced on June 12, 2003, by Rep. Alcee Hastings (D-FL) and cosponsored by 27, would condemn Iran for developing a uranium-enrichment facility with potential for developing a program for proliferation and for its support of global terrorism.
- H. Res. 259, introduced on June 4, 2003, by Rep. Edward J. Markey (D-MA), which was cosponsored by 23, would call for robust inspections of Iran's nuclear programs.

III. Obstacles

- Iran's long record of concealment and deception regarding nuclear activities that could serve both peaceful and military purposes and its sponsorship of terrorism will make it politically difficult for the United States to offer benefits to Iran in exchange for cooperation on nuclear nonproliferation issues.
- At the same time, hard-liners in Iran may make it very difficult for Iranian leaders to relinquish the investment that Iran has already made in the development of the fuel cycle—not to mention the national pride that many Iranians may take in their country operating its own nuclear power system or to building its own nuclear arsenal.
- The Bush administration has not clearly yet articulated a strategy for preventing Iran from acquiring a nuclear-weapons capability.
- Hard-liners in Iran may have the firm intention to acquire a nuclear-weapons capability while preventing or delaying a strong reaction on the part of the United States and others in the international community.
- As long as Israel has nuclear weapons, or other Middle Eastern countries believe that it does, a large segment of their populations will consider it necessary or desirable for them to develop a counter-balancing nuclear capability.
- The IAEA may be able to maintain an effective watch on Iran's nuclear activities as long as Iran remains a party to the NPT and Iran's Additional Protocol remains in effect. However, even under the watchful eye of the IAEA, Iran could continue to develop a complete fuel-cycle capability—which is permissible under the NPT—and thus acquire the ability to produce weapons-grade HEU and plutonium. Then, upon withdrawing from the NPT, it could use that production capability to begin making the materials needed for nuclear weapons.

IV. Q & A

Q. What is the Administration doing to prevent Iran from acquiring nuclear weapons?

A. As set forth in the testimony of Under Secretary of State for Arms Control and International Security John R. Bolton in June 24, 2004, testimony before the House International Relation Committee, Subcommittee on the Middle East and Central Asia, the administration:

- “strongly believes that Iran has a clandestine program to produce nuclear weapons...”;
- “believes the time to report this issue to the Security Council is long overdue ... [and is] working ... to urge an IAEA Board of Governors resolution that declares Iran in noncompliance with its IAEA safeguards obligations and reports that noncompliance to the UN Security Council”;
- seeks to deny Iran further access to nuclear fuel cycle equipment—
 - by revising the Nuclear Suppliers Group guidelines to prevent the transfer of enrichment and reprocessing equipment technology to countries that do not already have full-scale functioning plants” and
 - by using the Proliferation Security Initiative to interdict unlawful shipments of nuclear equipment; and
- is focusing “special attention” on Russia as the supplier of the Bushehr reactor.

Deputy Secretary of State Richard L. Armitage, in October 28, 2003, testimony before the Senate Committee on Foreign Relations, noted, “Iran is a country in the midst of a tremendous transformation” that American policy could influence. He stated that there was, at that time, “a struggle between destructive elements of Iran’s society and leadership, who want to keep the country mired in a violent, corrupt, and insular past, and a forward-looking popular movement, which want a more engaged and modern Iran to emerge.” Thus, he noted that “we must keep all options on the table,” that “international and multilateral responses—if sustained—will be especially effective in meeting the challenges Iran poses to ... nonproliferation regimes ...”, and that “a united international front is especially critical.”

Q. Why are some countries trying to avoid a referral to the Security Council and the imposition of sanctions against Iran?

A. They may not believe that Iran’s many violations of its safeguard agreement constitute proof that Iran has a nuclear weapons program, but probably more importantly, they may be trying to encourage so-called pragmatic leaders in Iran who are pressing for greater engagement with the international community, rather than continued isolation. They may also be concerned that UN sanctions may tip the balance in favor of Iranian hard-liners who have argued that their country should drop out of the NPT and speed up development of a nuclear bomb.

Q. What do the most recent IAEA Board of Governors’ resolutions conclude?

A. On the positive side, the June 18, 2004, resolution noted that:

- The Board was “encouraged by the Director General’s assessment that there has been good progress” on certain actions agreed upon with Iran in early April 2004 and that “the Agency continues to make progress in gaining a comprehensive understanding of Iran’s program...”; and
- “Iranian cooperation has resulted in Agency access to all requested locations.”

However, the Board also noted some strong negatives:

- Almost two years after Iran’s undeclared nuclear activities came to the IAEA’s attention, a number of questions remain outstanding, in particular—
 - the sources of all HEU contamination in Iran, with the information provided not being adequate to resolve the issue; and
 - important information about the P-2 centrifuge program required repeated requests and has been incomplete and unclear.
- The Board “[d]eploras ... the fact that, overall, ... Iran’s cooperation has not been as full, timely and proactive as it should have been,” and cited in particular Iran’s postponement from mid-March to mid-April visits by IAEA experts to locations involved in Iran’s P-2 centrifuge program that delayed the taking of environmental samples.

Thus, the resolution stressed that, with the passage of time, it is becoming ever more important that Iran work proactively to provide the IAEA with the information and access to places, data, and persons necessary for a full understanding of Iran’s enrichment programs and called upon Iran to do so.

Further, with respect to the suspension of enrichment activities, the Board regretted that the commitments have not been fully implemented and called on Iran “immediately to correct all remaining shortcomings” and, in keeping with the IAEA’s broader understanding of what the suspension should entail, to refrain from the production of uranium fluoride and the production of centrifuge components.

Also, to help restore international confidence that Iran’s past concealment of nuclear programs had undermined, the Board called on Iran to undertake two confidence-building measures: “reconsider” its decisions to (1) begin production testing at the Uranium Conversion Facility,” and (2) start construction of a research reactor moderated by heavy water.

The Board, in its September 18 resolution felt it necessary once again to urge Iran proactively provide to the IAEA investigators full information regarding its nuclear programs. That resolution also called for the IAEA Director General, in advance of the November 25 board meeting, to provide the Board with a recapitulation of IAEA findings on Iran’s nuclear program and a “detailed analysis of the implications of those finding in relation to Iran’s implementation of its Safeguards Agreement.” That analysis could provide the basis for a finding Iran had violated its agreement, which is grounds for referral of the matter to the UN Security Council.

Q. What will happen if Iran fails to comply with the IAEA Board of Governor’s most recent resolution insisting on full and proactive cooperation?

A. The answer is not clear. The United States, which already believes that referral to the UN Security Council, where sanctions or other punishment could be considered, is overdue, could be expected to urge that course more strongly. However, as to other countries on the Board, it appears that much will depend on the seriousness of Iran's shortcomings at this point and the prospects for a negotiated solution resulting in a suspension of Iran's uranium enrichment program.

Q. Will the IAEA be able to prevent Iran from getting a nuclear weapon?

A. If Iran continues to abide by the Additional Protocol, which provides the IAEA with broad powers of inspection and environmental sampling, even at locations that have not been declared by Iran to be part of its nuclear programs, the IAEA would likely be able to detect any further cheating by Iran. However, the IAEA itself cannot take any action to stop or prevent cheating except to refer the matter to the UN Security Council.

The issue as to whether Iran will eventually develop nuclear weapons will involve larger questions such as whether Iran can be convinced to pursue a more moderate course of action or hard-liners within the Iranian government intent on acquiring nuclear weapons will prevail. The prospects for Iranian moderation might well be advanced by a collaborative effort, with US participation, to ease the regional security concerns that even moderate Iranians are concerned about and to which they may see a nuclear deterrent as a rational response.

Q. When could Iran have a nuclear weapon?

A. The Bush administration has been operating on the assumption that Iran could have a nuclear bomb by 2006 if no steps are taken to slow the program, says Kenneth Katzman, a specialist in Middle East affairs for the Congressional Research Service. On June 11, 2003, Secretary of Defense Donald H. Rumsfeld said, "The assessment is that they [the Iranians] do have a very active program and are likely to have nuclear weapons in a relatively short period of time."⁴¹ However, any speculation in this regard involves a number of significant variables, including Iran's ability successfully to run a uranium enrichment facility, a technologically challenging undertaking.

Q. What are some of the indications that Iran is seeking nuclear weapons?

A. In general, it is hard to square Iran's concealment of its nuclear activities with its assertions that it has had no intention to develop nuclear weapons. There is no apparent reason for Iran to have kept peaceful pursuits secret except, perhaps, for a concern that Israel might bomb a dual-use facility such as a uranium enrichment plant. Among the specific indications that Iran seeks a nuclear weapons capability are:

- Iranian officials have admitted that Iran has been secretly developing, for 18 years, a uranium centrifuge enrichment program, and, for 12 years, a laser

enrichment program, in contravention of Iran's nuclear safeguards agreement with the IAEA. The enrichment facilities could produce weapons-grade HEU.

- Iran has secretly produced small amounts of low-enriched uranium and separated plutonium, again in contravention of its safeguard agreement.
- Iran confirmed in February 2003 that it was constructing a secret gas centrifuge uranium-enrichment plant at Natanz. Traces of enriched uranium were also found in a centrifuge workshop at the Kalaye Electric Company near Tehran.
- Iran also admitted in February 2003 that a secret heavy water production facility was under construction in Arak, just north of Natanz. This type of facility is especially useful in producing plutonium suitable for making nuclear weapons.
- Iran failed to reveal to the IAEA that it imported 1.8 metric tons of natural uranium from China in 1991 and stored it at an undisclosed laboratory at the Tehran Nuclear Research Center.
- Iranian officials want to mine and enrich their own uranium, which many experts say is costly and unnecessary for a civilian nuclear program because the importation of LEU fuel would be a cheaper alternative.

However, it is difficult to evaluate how strongly Iran may feel about having self-sufficiency in the area of nuclear power. Any such judgment ultimately depends on an evaluation of Iran's view of the trustworthiness of those offering or guaranteeing the nuclear fuel supply.

In the wake of the 1991 Gulf War, Iranian self-sufficiency became an important strategic goal in defense and other areas. The Iranians note with some justification that the world community is not always entirely dependable, and they do not want to see future fuel supplies for reactors held hostage by the United States or another party.

V. Talking Points

- Preventing Iran from acquiring nuclear weapons will require more than calling on the UN to take steps to accomplish this goal.
- The United States needs a comprehensive strategy for convincing Iran not to proceed further with the development of a nuclear weapons capability and to dismantle its facilities for enriching uranium and manufacturing plutonium.
- To succeed, such a strategy should entail working closely with a consortium of other nations, including Iran's important trading partners, both to—
 - offer Iran tangible rewards for measurable progress it makes in cooperating with the IAEA, in conformity with its AP, and in verifiably halting and then dismantling its uranium enrichment and heavy-water reactor facilities; and
 - impose penalties for deviation from that course.

- The rewards must include a source of nuclear fuel, guaranteed by the United States, the European Union, Russia, and possibly others, at prices making the development and use of an indigenous fuel cycle uneconomical, with adequate assurances that the spent fuel will be safely exported to one of the NPT nuclear weapons states.
- Diplomacy with Iran must recognize both the fact that many Iranians seek a more democratic, progressive, outward-looking government and that that point of view needs to be nurtured, as well as the fact the current Islamic regime may remain in power for the foreseeable future.

VI. Factoids
(N/A)

VII. Applicable Treaties, Legislation, and Other International Agreements

- Article III of the Nuclear Nonproliferation Treaty requires all non-nuclear-weapons-state parties to conclude comprehensive safeguard agreements with the IAEA. Safeguards agreements are based on an IAEA document entitled "The Structure and Content of Agreements between the Agency and States Required in Connection with the Treaty on Non-Proliferation of Nuclear Weapons" (INFCIRC/153). Generally, the safeguard agreement requires the state to declare facilities that are engaged in nuclear activities, certain nuclear activities themselves, and the state's inventories of nuclear materials so that the IAEA can confirm that the state is not diverting any nuclear technology or materials to weapons purposes.
Following the discovery after the first Persian Gulf War in 1991 that Iraq had been able to make considerable progress in its nuclear weapons program despite its safeguard agreement, the international community developed a more effective instrument, the Additional Protocol (AP). Iran signed an AP on December 18, 2003, and stated that it would abide by its terms pending ratification. Iran had not ratified as of July 2004. The AP is Iran's voluntary agreement to provide the IAEA with a more complete and comprehensive picture of its nuclear activities. Thus, the AP requires Iran to provide IAEA access to any place at a nuclear site and to other locations where nuclear material is or is suspected to be present. The AP seeks to transform the safeguards regime from a quantitative system accounting for declared quantities of materials and monitoring declared activities to a qualitative system allowing the IAEA to acquire a comprehensive picture of a Iran's nuclear and nuclear-related activities, including nuclear-related imports and exports. The AP expands the IAEA's ability to check for concealed nuclear facilities by providing it with authority to visit any facility—declared or not—to investigate questions or inconsistencies in its nuclear declarations.
- The Iran Nonproliferation Act of 2000 (Public Law 106-178) requires the President to submit biannual reports identifying foreign person who have transferred to Iran WMD-related technology or information that is prohibited

under various treaties and other multilateral proliferation regimes or would be prohibited if it were U.S. goods, services, or technology being transferred. This legislation also authorizes the President to take action against persons or entities found to be engaged in such activity and prohibits certain extraordinary payments to Russia in connection with the International Space Station unless the President has determined that Russia is cooperating in preventing proliferation of WMD and cruise and ballistic missiles to Iran.

- The Iran and Libya Sanctions Act of 1996 (ILSA; Public Law 104-172), in order to impede Iran's ability to support acts of international terrorism and fund the acquisition of WMD, directs the President to impose economic sanctions against persons who undertake major investments in Iranian petroleum-related projects. The sanctions generally include:
 - Disallowing Export-Import Bank assistance.
 - Withholding the issuance of license or permission to export certain goods or technology to a sanctioned person.
 - Prohibiting U.S. financial institutions from making loans or providing credits to a sanctioned person.
 - A ban on selling goods or services to the U.S. Government.
 - Restricting imports into the United States from a sanctioned person.The ILSA also grants the President the authority to terminate or waive sanctions under specified conditions. The ILSA was due to expire August 5, 1996, but was extended for 5 years by Public Law 107-24.

- For descriptions of general laws providing for sanctions against persons who assist a non-nuclear-weapon state to acquire nuclear material or devices, see the "Research Library Databases: Legislative Basis for US Sanctions Against Supplier Countries," at the Nuclear Threat Initiative website at <http://www.nti.org/db/china/sanctlaw.htm>.

¹ Mohammad Sahimi, "Iran's Nuclear Program. Part I: Its History," *Payvand's Iran News* (October 2, 2003), accessed at: www.payvand.com/news/03/oct/1015.html.

² *Ibid.*

³ Center for Defense Information, *CDI Terrorism Project*, "Iran, Israel and Nuclear Weapons in the Middle East," (Feb. 14, 2002), accessed at: <http://www.cdi.org/terrorism/menukes.cfm>; Center for Nonproliferation Studies, *Iran Profile* (Updated May 2004), accessed at: http://nti.org/e_research/profiles/Iran/index.html.

⁴ Michael Eisenstadt, "Delay, Deter and Contain, Roll-Back: Toward a Strategy for Dealing with Iran's Nuclear Ambitions," in *Iran's Bomb: American and Iranian Perspectives* (The Nixon Center, March 2004), p.13, accessed at: <http://www.nixoncenter.org/publications/monographs/IransBomb.pdf>.

⁵ Statement of H.E. Mr. G. Ali Khoshroo, Deputy Foreign Minister for Leal and International Affairs, Second Session of the Prepcom for the 2005 NPY Review Conference, April 29, 2003, as quoted in Sharon Squassoni, "Iran's Nuclear Program: Recent Developments," Congressional Research Service Report for the Congress, Order Code RS21592 (Updated March 4, 2004), p.2, accessed at http://www.ceip.org/files/projects/npp/pdf/Iran/crsirannuclear2-04_04.pdf.

⁶ "Iran can't use nukes forbidden by Islam: Kharazi," *Daily Times* (July 8, 2004), accessed at: http://www.dailytimes.com.pk/default.asp?page=story_9-6-2003_pg7_2. See also Robert Collier, "Nuclear weapons unholy, Iran says: Islam forbids use, clerics proclaim," *San Francisco Chronicle* (October 31, 2003), accessed at <http://www.sfgate.com/cgi-bin/article.cgi?f=/chronicle/a/2003/10/31/MNGHJ2NFRE1.DTL>, quoting Ayatollah Ali Khamenei, the nation's "supreme leader," stating, "The Islamic Republic of Iran, based on its fundamental religious and legal beliefs, would never resort to the use of weapons of mass destruction. ... [F]undamentally we are against any production of weapons of mass destruction in any form."

⁷ Director General of the IAEA, "Report to the Board of Governors: Implementation of the NPT safeguards agreement in the Islamic Republic of Iran," GOV/2003/40, June 6, 2003, accessed at: <http://www.iaea.org/Publications/Documents/Board/2003/gov2003-40.pdf>.

⁸ *Ibid.*; and Director General of the IAEA, "Report to the Board of Governors: Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran," GOV/2003/75, November 10, 2003, accessed at: <http://www.iaea.org/Publications/Documents/Board/2003/gov2003-75.pdf>.

⁹ The text can be accessed at: http://bbc.co.uk/go/pr/fr/-/1/hi/world/middle_east/3211036.stm.

¹⁰ Marshall Breit, "Iran's Programs to Produce Plutonium and Enriched Uranium," *Carnegie Fact Sheet* (Carnegie Endowment for International Peace, updated April 1, 2004), accessed at: <http://www.ceip.org/files/projects/npp/resources/Factsheets/iransnuclearprogram.htm>.

¹¹ A centrifuge facility can produce non-weapon-grade low-enriched uranium (LEU)¹¹ as fuel for power reactors. However, the centrifuge process can be continued with a quantity of LEU so that it eventually is enriched to level of weapon-grade highly enriched uranium (HEU). (The boundary between LEU and HEU is 20% U-235; and weapon-grade HEU is at least 90% U-235.)

¹² Marshall Breit, *op. cit.*, note 10.

¹³ It takes about 12 kilograms of HEU to build a nuclear weapon. Matthew Bunn, Anthony Weir, and John P. Holdren, *Controlling Nuclear Warheads and Materials: A Report Card and Action Plan* (Project on Managing the Atom, Belfer Center for Science and International Affairs, John F. Kennedy School of Government, Harvard University, March 2003), p. 13, n. 10.

¹⁴ Marshall Breit, *op. cit.*, note 10.

¹⁵ Director General of the IAEA, "Report to the Board of Governors: Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran," GOV/20-04/60, September 1, 2004, accessed at: <http://www.iaea.org/Publications/Documents/Board/2004/gov2004-60.pdf>.

¹⁶ This entire paragraph is based on Marshall Breit, *op. cit.*, note 6.

¹⁷ "Iran Set to Resume Building Centrifuges Tomorrow," *Global Security Newswire* (June 28, 2004), accessed at: http://nti.org/d_newswire/issues/2004_6_28.html#9727A1B8.

¹⁸ Ali Akbar Dareini, "Defying U.N., Iran Will Pursue Nuclear Program," Associated Press (September 21, 2004), accessed at: http://aolsvc.news.aol.com/news/article.adp?id=20040921032209990001&_mpc=news%2e6&cid=842.

¹⁹ Mohammad Sahimi, *op. cit.*, note 1.

²⁰ Center for Nonproliferation Studies, *op. cit.*, note 3; "Iran Timeline," on the Iraq Watch website: <http://www.iraqwatch.org/roundtables/RT4/Iran-Timeline.htm>.

²¹ "UN clear Iran nuclear facility," *BBC News*

²² William J. Broad, "Nuclear Weapons in Iran: Plowshare or Sword?" *New York Times* (May 25, 2004), accessed at: <http://www.nci.org/04nci/05/NYT%20-%20Nuclear%20Weapons%20in%20Iran.htm>.

²³ "Price negotiations holding up launch of Bushehr: Russian official," Agence France-Presse (Moscow, July 9, 2004), accessed at: <http://www.spacewar.com/2004/040709164846.1lqkqqlj.html>.

²⁴ The following paragraph from the November 10, 2003, report of the IAEA Director General (see note 7) describes these efforts:

1. The recent disclosures by Iran about its nuclear programme clearly show that, in the past, Iran had concealed many aspects of its nuclear activities, with resultant breaches of its obligation to comply with the provisions of the Safeguards Agreement. Iran's policy of concealment continued until last month, with co-operation being limited and reactive, and information being slow in coming, changing and contradictory. While most of the breaches identified to date have involved limited quantities of nuclear material, they have dealt with the most sensitive aspects of the nuclear fuel cycle, including enrichment and reprocessing. And although the materials would require further processing before being suitable for weapons purposes, the number of failures by Iran to report in a timely manner the material, facilities and activities in question as it is obliged to do pursuant to its Safeguards Agreement has given rise to serious concerns.

2. Following the Board's adoption of resolution GOV/2003/69 [September 12, 2003], the Government of Iran informed the Director General that it had now adopted a policy of full disclosure and had decided to provide the Agency with a full picture of all of its nuclear activities. Since that time, Iran has shown active co-operation and openness. This is evidenced, in particular, by Iran's granting to the Agency unrestricted access to all locations the Agency requested to visit; by the provision of information and clarifications in relation to the origin of imported equipment and components; and by making individuals available for interviews. This is a welcome development.

3. The Agency will now undertake all the steps necessary to confirm that the information provided by Iran on its past and present nuclear activities is correct and complete. To date, there is no evidence that the previously undeclared nuclear material and activities referred to above were related to a nuclear weapons programme. However, given Iran's past pattern of concealment, it will take some time before the Agency is able to conclude that Iran's nuclear programme is exclusively for peaceful purposes. To that end, the Agency must have a particularly robust verification system in place. An Additional Protocol, coupled with a policy of full transparency and openness on the part of Iran, is indispensable for such a system.

²⁵ "Iran Offers Full Nuclear Transparency," *Global Security Newswire* (November 14, 2003).

²⁶ Ali Akbar Dareini, *op. cit.*, note 18.

²⁷ Director General of the IAEA, "Report to the Board of Governors: Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran," GOV/2004/11 (February 24, 2004).

²⁸ See note 17.

²⁹ "Iran Defies IAEA Resolution Calling for Nuclear Suspension, Resumes Uranium Conversion," *Global Security Newswire* (September 22, 2004), accessed at: http://nti.org/d_newswire/issues/2004_9_22.html.

³⁰ "Iran to review uranium enrichment," *CNN.com: The World* (June 19, 2004), accessed at: <http://www.cnn.com/2004/WORLD/meast/06/19/iran.nuclear.reut/>.

³¹ Sharon Squassoni, "Iran's Nuclear Program: Recent Developments," Congressional Research Report for Congress, Order Code RS21592 (Updated March 4, 2004), accessed at: http://www.ceip.org/files/projects/npp/pdf/Iran/crsiranuclear2-04_04.pdf.

³² Iran's plan to build a heavy-water research reactor is of particular concern because such a reactor can be used to produce bomb-grade plutonium. As noted in a recent *Jane's Intelligence Review* article:

A heavy water reactor is among the most dangerous in existence from a proliferation perspective. One reason is that ... heavy water allows a high number of U238 (uranium-238 isotope) atoms to absorb neutrons, resulting in the production of a greater quantity and better quality of plutonium product ... compared to a light water reactor.

According to David Albright, Director of the Institute for Science and International Security, the IR-40 will be able to produce 8-10kg of plutonium per year - approximately one to two bombs' worth of nuclear material. The IAEA holds that 8kg of plutonium constitutes a "significant quantity" - enough to build a nuclear weapon.

Jack Boureston and Charles Mahaffey, "Iran pursues plans for heavy water reactor," *Jane's Intelligence Review* (November 14, 2003), accessed at:

http://www.janes.com/security/international_security/news/jir/jir031114_1_n.shtml.

³³ "IAEA: Iran nuke talks still open," *CNN.com* (September 19, 2004), accessed at:

<http://edition.cnn.com/2004/WORLD/meast/09/19/nuclear.iran/index.html>.

³⁴ Ali Akbar Dareini, *op. cit.*, note 18.

³⁵ In fact, the Administration's approach seems pointedly to eschew any effort to negotiate with Iran. Under Secretary of State for Arms Control and International Security John R. Bolton, in an August 17, 2004, speech entitled "Preventing Iran from Acquiring Nuclear Weapons," suggested only unspecified UN Security Council action as a means to stop Iran from building nuclear weapons. Under Secretary Bolton noted favorably National Security Advisor Condoleezza Rice's statement that "The Iranians have been

trouble for a very long time. And it's one reason that this regime has to be isolated in its bad behavior, not quote-unquote, 'engaged.'" In his concluding passage, Mr. Bolton said, "We cannot let Iran, a leading sponsor of international terrorism, acquire nuclear weapons and the means to deliver them Without serious, concerted, immediate intervention by the international community, Iran will be well on the road to doing so." This speech can be accessed at: <http://www.state.gov/t/us/rm/35281.htm>.

³⁶ This summary of these arguments comes from Geoffrey Kemp, Introduction to *Iran's Bomb: American and Iranian Perspectives* (The Nixon Center, March 2004), p. vii, accessed at: <http://www.nixoncenter.org/publications/monographs/TransBomb.pdf>.

³⁷ Michael Eisenstadt, "Delay, Deter and Contain, Roll-Back: Toward a Strategy for Dealing with Iran's Nuclear Ambitions," in *Iran's Bomb: American and Iranian Perspectives* (The Nixon Center, March 2004), p. 14, accessed at: <http://www.nixoncenter.org/publications/monographs/TransBomb.pdf>.

³⁸ George Perkovich, Joseph Cirincione, Rose Gottemoeller, Jon B. Wolfsthal, *Universal Compliance: A Strategy for Nuclear Strategy* (Draft, June 2004), pp. 77-80.

³⁹ "Iran rejects more nuclear curbs," *BBC News* (June 12, 2004) accessed at: http://news.bbc.co.uk/go/pr/fr/-/1/hi/world/middle_east/3801187.stm.

⁴⁰ In a June 8, 2004, IAEA Director General Mohammed ElBaradei reportedly wanted to open a dialogue on making the Middle East a zone free of weapons of mass destruction, and Mr. Sharon reiterated the Israeli position that it would support an effort once there is regional peace. Greg Myre, "Israel Links a Nuclear-Free Zone to Regional Peace," *New York Times* (June 8, 2004) accessed at: <http://www.nytimes.com/2004/07/08/international/middleeast/08CND-NUCL.html>.

⁴¹ Sharon Otterman, "Iran Nuclear Weapons," Council on Foreign Relations website (updated November 25, 2003), accessed at: http://www.cfr.org/background/iran_nuclear.php.