# Iran and the IAEA

## Michael Adler

- Iran is a charter member of the Nuclear Non-Proliferation Treaty (NPT), the guide for the global fight against the spread of atomic weapons. Iran insists its nuclear program is for energy, not a bomb.

- Iran cites the NPT to justify its nuclear work, including uranium enrichment, which can be used to generate electricity or to make a bomb. Article IV guarantees "the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination."

- Iran claims to honor the NPT obligations for monitoring its atomic program. It has been careful not to break the safeguards agreement that allows U.N. inspectors from the International Atomic Energy Agency (IAEA) to verify compliance with the NPT.

- The IAEA cited Iran for breach of safeguards, saying the Islamic Republic hid parts of its nuclear program and failed to answer questions on possible military work. This led the U.N. Security Council to impose sanctions in 2010 to get Iran to provide data and to suspend enrichment to allay fears it seeks nuclear weapons.

- The IAEA will play a critical role in monitoring the implementation of the final nuclear deal reached by Iran and the world's six major powers on July 14, 2015.

## Overview

Iran has been the subject of one of the most intensive investigations in the history of the International Atomic Energy Agency (IAEA). It was not always this way. Iran was an original signatory of the Nuclear Non-Proliferation (NPT) Treaty in 1968. The shah concluded an IAEA safeguards agreement in 1974.

After the 1979 revolution, revolutionary leader Ayatollah Ruhollah Khomeini initially opposed a nuclear program as a Western-oriented relic of the monarchy. But Iran and Iraq both did secret nuclear work during their 1980 to 1988 war. In August 2002, an Iranian resistance group revealed that Tehran was hiding two key nuclear plants – one in Natanz to enrich uranium, the other in Arak to produce plutonium. These fissile materials can be fuel for civilian power reactors, but also the raw material for atom bombs. The disclosure set off the current Iranian nuclear dispute.

Iran became a special focus for the IAEA. The U.N. agency, which is based in Vienna, issued 30 reports between June 2003 and September 2010 on Iran's nuclear program and its covert activities dating back to the 1980s. Tehran initially provided cooperation over and above regular safeguards, allowing inspections of non-nuclear sites, for instance. But on September 24, 2005, the IAEA's executive board found Iran in non-compliance with the NPT due to "failures and breaches of its obligations to comply with its NPT Safeguards Agreement," namely for hiding a wide range of strategic nuclear work. The board gave Iran time to answer crucial IAEA questions and to make key scientists available for interviews. It also called on the Islamic Republic to suspend uranium enrichment.

But with Iran moving to enrich, the board decided on February 4, 2006 to take the matter to the U.N. Security Council for possible punitive action. The Security Council imposed four rounds of sanctions to pressure Iran to suspend uranium enrichment, allow tougher inspections and cooperate fully with the IAEA. But by September 2010, Iran continued to enrich uranium and defy the Security Council on grounds that it has the right to the full range of civilian nuclear work under the NPT.

After President Hassan Rouhani came to office in 2013, Iran entered nuclear negotiations with the world's six major powers - Britain, China, France, Germany, Russia, and the United States. In 2015, negotiators reached a final nuclear deal that restricted Iran's nuclear activities in exchange for sanctions relief. The agreement included provisions to broaden the IAEA's monitoring activities in Iran. The agency was responsible for verifying Iran's compliance with the deal. Iran and the IAEA also signed a separate Roadmap to clarify outstanding issues on Iran's nuclear activities, specifically the possible military dimensions of its nuclear program.

## The IAEA role

The IAEA was founded in 1957 as the U.N. branch of the "Atoms for Peace" program proposed by President Dwight Eisenhower. The idea was to make civilian atomic power accessible, in return for nations forswearing the pursuit of nuclear weapons. When the NPT went into effect in 1970, the IAEA became its verification arm. Headquartered in Vienna, Austria, the U.N. watchdog agency investigates national nuclear programs worldwide in order to guarantee that nuclear material is not being diverted for military use.

The IAEA is an essential player in the Iranian nuclear issue, as it is the international community's eyes and ears monitoring the machines and scientists of the Iranian program. Its role has increased with the growing concern about Iran's atomic ambitions. Treating Iran as a special case, the IAEA has upped its inspections in the country, carrying out frequent visits to dozens of sites. It has an almost constant presence at key

sites, such as the enrichment plant at Natanz. It uses remote cameras, as well as regular and unannounced inspections to verify that nuclear material being used and produced is not diverted for military purposes. Despite this, key questions about Iran's program remain, namely whether there was weapons work.

Prior to the brokering of the final nuclear deal in 2015, the IAEA had several tasks—and issues—with Iran:

- The IAEA was empowered to monitor all sites where there was nuclear material. But it clashed with Iran over access to sites where nuclear material had not yet been introduced, such as at a reactor being built in Arak that could eventually make plutonium.

- The IAEA was particularly frustrated about Iran blocking access to key Iranian scientists, including Mohsen Fakhrizadeh, who has allegedly led Iran's atomic weapons work.

- The IAEA monitored Tehran's compliance with U.N. Security Council resolutions.

- It also oversaw attempts to supply fuel to a research reactor in Tehran.

## The IAEA investigation

In response to revelations about Iran's secret sites, former IAEA chief Mohamed ElBaradei led an inspection of the Natanz enrichment site in February 2003. He issued his first special report on Iran in June 2003. The report gave a glimpse into 18 years of covert Iranian nuclear work. It found that Iran had "failed to meet its obligations under its [NPT] Safeguards Agreement with respect to 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." These included "failure to declare the import of natural uranium in 1991."

More followed. The next report in August 2003 revealed that IAEA inspectors had found traces of enriched uranium on centrifuge machines in Natanz. Iran had told the agency, however, that it had not yet introduced nuclear material at this site, which was still under construction. The finding of the uranium particles raised suspicion that Iran was hiding yet more nuclear work. The IAEA called on Iran to make a complete disclosure of its nuclear activities by the end of October 2003.

As the IAEA investigation geared up and the revelations came out, the United States lobbied in Vienna to get the IAEA to declare the Islamic Republic in non-compliance with its safeguards obligations, thus clearing the way to U.N. sanctions. But leading

western European states, as well as Russia, feared this could lead to an escalation of moves against Iran, and even war, as had happened in Iraq. The so-called EU-3—Britain, France and Germany—set out to parry U.S. pressure. They maneuvered for talks with Iran, and for keeping the Iran case away from the Security Council in New York.

In a diplomatic coup de theatre, the foreign ministers of Britain, France and Germany made a dramatic, surprise visit to Tehran on October 21, 2003 to strike a deal on resolving the nuclear crisis. Iran agreed to suspend enrichment and to make the requested full declaration to the IAEA about its activities. This kept talks alive and avoided sanctions.

The deal also kept an IAEA report the following November from having the impact the United States had been seeking, namely to be the catalyst for moving towards sanctions. The process begun by the EU-3 meant that Iran would be given more time to answer the IAEA's questions rather than be referred to New York for punitive measures. In addition, ElBaradei said in his report, in a conclusion the United States blasted as exonerating Iran, that there was no "evidence" Iran was seeking nuclear weapons. Yet, the report was strong. It said, "Iran has failed in a number of instances over an extended period of time to meet its obligations under its Safeguards Agreement with respect to the reporting of nuclear material and its processing and use, as well as the declaration of facilities where such material has been processed and stored."

## IAEA chronology

The evolution of the Iran nuclear crisis can be traced in the actions and reporting of the IAEA. Here is a brief chronology of events leading to Iran being taken to the U.N. Security Council:

- February 24, 2004: The IAEA reports that Iran is working to develop a more powerful centrifuge and on separating Polonium-210, which can be used in weapons.

- March 13, 2004: The IAEA board reprimands Iran for hiding possible weapons-related activities.

- March 17, 2004: Testifying before the U.S. Congress, IAEA chief Mohamed ElBaradei says the "jury is still out" on Iran's nuclear program.

- November 2004: In the Paris Agreement, European negotiators, the IAEA and Iran agree on the terms to suspend uranium enrichment.

- August 8, 2005: The IAEA reports that Iran had ended suspension and begun work to convert uranium into fuel for enrichment.

- September 2, 2005: The IAEA reports that there are still unresolved issues regarding Iran's nuclear program and says that full Iranian cooperation is "overdue."

- September 24, 2005: The IAEA board votes 22-1, with 12 abstentions, to find Iran in "non-compliance" with the NPT's Safeguards Agreement. This clears the way to report Iran to the Security Council for action.

February 4, 2006: After failing to win Iran's cooperation, the IAEA board votes 27-3, with five abstentions, to refer Iran to the Security Council, pending one more report from ElBaradei
February 27, 2006: ElBaradei reports that the IAEA is still uncertain about both the scope and nature of Iran's nuclear program. The report is sent to the Security Council.

## Case to the U.N.

After Iran was taken to the Security Council, and especially after the first sanctions were imposed in December 2006, the Iran dossier was divided between New York and Vienna. The IAEA continued monitoring Iran's activities, but the Security Council decided whether and how to punish the Islamic Republic. Iran reacted by reducing its cooperation with the IAEA. It followed strict safeguards measures, which verify the use of nuclear material. But it no longer allowed inspections at sites that may not have had nuclear material but that were crucial to the atomic program.

Iran and the IAEA were increasingly engaged in a cat-and-mouse game: Iran would build up credibility with concessions and cooperation, only to lose it after revelations of secret activities or failure to provide information about its activities. This pattern continued through September 2009, when the United States and its allies reported that Tehran had been hiding work on a second enrichment site, buried in a mountain near the holy city of Qom.

Iran consistently countered that it cooperated fully with the IAEA. Tehran said it resumed enrichment because the international community backtracked on its promises to help Tehran develop a civilian nuclear energy program and to remove Iran as a "special case" at the IAEA.

Four rounds of punitive U.N. sanctions did little to change Iran's position or its cooperation with the IAEA. In its September 2010 report, the IAEA said Iran had actively hampered its work by barring two inspectors from the country and even

breaking seals on atomic material at Natanz. "Iran has not provided the necessary cooperation to permit the Agency to confirm that all nuclear material in Iran is in peaceful activities," the report said, in unusually blunt language. Tehran insisted that it had the right to vet inspectors and turn them away.

The standoff continued for the next few years. In November 2011, the IAEA Board of Governors adopted a resolution expressing "deep and increasing concern about the unresolved issues regarding the Iranian nuclear program, including those which need to be clarified to exclude the existence of possible military dimensions." The resolution urged Iran to comply with its nuclear-related obligations under the U.N. Security Council.

One year later, IAEA Director General Yukiya Amano told the U.N. General Assembly that efforts to engage Iran had not yielded "concrete results" and that the IAEA could not "conclude that all nuclear material in Iran is in peaceful activities."

The IAEA confirmed that Iran was continuing to enrich uranium, add to its stockpile, upgrade facilities, and build a heavy water reactor. U.N. inspectors alleged that Iran had "sanitized" the Parchin military site, making it difficult to investigate possible military dimensions of its nuclear program. Throughout 2012, the United States and European Union expanded sanctions on Iran.

## Nuclear Talks

A turning point came in late 2013, as the world's six major powers began negotiations with Iran over its nuclear program. On November 11, Amano visited Tehran and met with Ali Akbar Salehi, head of Iran's Atomic Energy Agency. They signed the Framework for Cooperation Agreement, which called for Tehran to provide the IAEA greater information and access relating to:

- The Gchine mine in Bandar Abbas
- The Heavy Water Production Plant near Arak
- All new research reactors
- The identification of 16 sites designated for the construction of nuclear power plants
- Iran's announcements about additional enrichment facilities
- Laser enrichment technology

On November 24, 2013, negotiators reached an interim agreement to constrain Tehran's nuclear program in exchange for limited sanctions relief. Iran pledged to neutralize its stockpile of enriched uranium, cease enrichment above five percent, stop installing additional centrifuges, and halt construction on the Arak heavy water reactor.

The agreement, known as the Joint Plan of Action, entered into force on Jan. 20, 2014. The same day, the IAEA issued a report stating that Iran had begun complying with its terms. The United States and European Union began waiving certain sanctions and preparing to release Iran's oil money frozen overseas.

In March, Amano announced that Iran had implemented the six measures required by the Framework for Cooperation Agreement. But he added that "much remains to be done to resolve all outstanding issues."

## The final nuclear deal

After more than 18 months of negotiations, Iran and the world's six major powers reached a final comprehensive nuclear deal on July 14, 2015, known as the Joint Comprehensive Plan of Action (JCPOA).

The IAEA will play a critical role in implementing the deal. The agency is responsible for monitoring Iran's compliance with nuclear-related measures, which will determine the timing of sanctions relief.

Before the deal is implemented, the IAEA must confirm that Iran:

- Reduced its supply of excess heavy water and halted construction on the Arak reactor
- Reduced its capacity to 5,060 centrifuges, enrichment levels to 3.67 percent, and its uranium stockpile to 300 kg
- Ceased enrichment activity at Fordo
- Is conducting R&D within the parameters specified by the JCPOA
- Notified the IAEA that it has provisionally applied the Additional Protocol

The IAEA will continue to oversee Iran's compliance for the duration of the deal, according to the following timeline.

## Major Points

**To ensure "breakout time" for a bomb is at least one year, Iran must:**

- **For 10 years:** Reduce centrifuges by 2/3 and limit facilities enriching uranium; limit research on new centrifuges
- **For 15 years:** Reduce uranium stockpile by 97 percent; limit enrichment to 3.67 percent; and refrain from constructing new facilities; Reconfigure research reactor to cut production of plutonium by 90 percent; no new reactors
- **For 20 years:** Allow surveillance of all centrifuge production
- **For 25 years:** Allow monitoring of all uranium mines and mills; confine all purchase of nuclear technology to approved channel
- **Permanently:** Allow inspections of declared and suspect undeclared facilities; refrain from any work on nuclear weapons; refrain from reprocessing fuel to extract plutonium

*Source: White House fact sheet*

The deal also contained measures to improve Iran's transparency with the IAEA.

First, Iran agreed to implement the Additional Protocol – a set of provisions that enhance the IAEA's ability to gather information on a state's nuclear activities and sites. While Iran's nuclear restrictions under the JCPOA will be phased out over time, the Additional Protocol will remain in force indefinitely. Under the deal, Iran is required to provisionally apply the protocol on the deal's adoption day, set to occur in October 2015.

Second, the deal refined the IAEA's mechanism to resolve allegations of undeclared nuclear sites and materials. Although the Additional Protocol allows U.N. inspectors to investigate clandestine activities, the JCPOA further specifies that these issues must be resolved in a 24-day period.

According to the deal, Iran and the IAEA have 14 days to agree upon a way to address allegations of undeclared sites. If they cannot, the matter is referred to the Joint Commission – a body consisting of members from Iran and the world's six major powers tasked with overseeing the deal's implementation. The commission's consultation process cannot exceed seven days, and Iran would then have three days to comply with any necessary measures.

Third, the deal stipulated that Iran must comply with the IAEA's requests for information about the possible military dimensions of its nuclear program, as specified in the "Roadmap for Clarification of Past and Present Outstanding Issues."

Amano and Salehi agreed to the roadmap on July 14, the same day as the final nuclear deal. The IAEA announced on October 15 that the activities set out in the roadmap had been completed. Amano aimed to complete a final assessment by December 2015.

On Sept. 21, 2015, Amano announced there had been "significant progress" in implementing the roadmap after meeting with Iranian officials in Tehran. Amano visited the Parchin military base for the first time, emphasizing that the site was "important in order to clarify issues related to possible military dimensions." Inspectors had been denied access to the site in 2012.

## Factoids

- The IAEA was founded in 1957 as a direct result of the U.S. "Atoms for Peace" initiative to spread peaceful nuclear technology and stop the proliferation of atomic weapons. It has 165 member states.

- Iran had no centrifuges turning in 2003, when the IAEA investigation began. By August 2010, it had 3,772 centrifuges enriching uranium and 5,084 more installed but not yet enriching, according to an IAEA report**.**

- In August 2015, the IAEA reported that Iran had 16,428 centrifuges installed at Natanz and 2,710 installed at Fordo. The nuclear deal requires Iran to reduce its number of centrifuges to 6,104 -- 5,060 of which will be permitted to enrich uranium – for 10 ten years. The excess centrifuges will be placed under continuous IAEA monitoring.

- As of June 2015, 126 states had implemented the Additional Protocol. Iran was one of 20 states that had signed the protocol, but not brought it into force – the step required to make it legally binding for the state.

## Trendlines

- Even under Mahmoud Ahmadinejad's controversial presidency, Tehran wanted to maintain at least minimal cooperation with the International Atomic Energy Agency, since kicking out all inspectors could have led to a harsher international response, including more severe sanctions and even military strikes.

- The extent of international inspectors' access to Iranian facilities – particularly military sites – was a key sticking point during the nuclear talks. If the deal is fully implemented, the IAEA will have greater access to information about Iran's nuclear program for at least the next two decades.

- The Islamic Republic is likely to continue to insist its nuclear program is strictly for peaceful nuclear energy, even if other secret sites or work are uncovered.

*This chapter was originally published in 2010 by Michael Adler, then a public policy scholar at the Woodrow Wilson International Center for Scholars, who formerly covered the International Atomic Energy Agency for Agence France-Presse. He passed away in 2014.*

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