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Background on the 'Possible Military Dimensions' of Iran's Nuclear Program

by [Nima Gerami](#)

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Brief Analysis

Iran's compartmented nuclear program and fears of sabotage have complicated efforts to address IAEA concerns about the program's suspected military side.

As senior officials from Iran and the P5+1 -- China, France, Russia, Britain, and the United States, plus Germany -- prepare for another round of nuclear talks in Vienna on June 16-20, one major issue that cannot be left unresolved regards the suspected military aspects of Iran's nuclear program. The so-called possible military dimensions (PMD) are being investigated by the International Atomic Energy Agency (IAEA) as part of a Framework for Cooperation with Iran, but the issue is unlikely to be resolved before the July 20 target deadline set by the Joint Plan of Action (JPOA) for negotiation of a comprehensive nuclear agreement between Iran and the P5+1.

Although the negotiations are aimed primarily at reaching a comprehensive agreement that limits the scope and level of Iran's uranium enrichment and plutonium production capabilities, the resolution of PMD issues has been left to the IAEA, which is working with Iran to implement a series of transparency measures to verify the exclusively peaceful nature of Iran's nuclear program. Accordingly, the JPOA states that a joint commission consisting of Iran and the European Union/P5+1 "will work with the IAEA to facilitate resolution of past and present issues of concern" -- an apparent reference to the PMD file. Yet President Hassan Rouhani and his nuclear negotiating team may be unable or unwilling to satisfactorily address questions about a possible parallel military nuclear program given an entrenched bureaucracy and fears of covert sabotage.

History of Alleged Weaponization Activities

Shortly after the 2002 public disclosures of Iran's undeclared nuclear activities, the IAEA noted in its safeguards reports that elements of Iran's nuclear program could be used for military purposes, but it did not lay out a detailed basis for these concerns until May 2008 and November 2011. The November 2011 report presented extensive analysis of evidence of Iran's possible weaponization activities. According to the IAEA, these activities took place under a "structured program" before they were halted in 2003, and included indications of activities related to "the development of a nuclear explosive device that continued after 2003" and could remain ongoing. The file of PMD issues indicated that organizations potentially associated with Iran's Islamic Revolutionary Guard Corps (IRGC) and other branches of the armed forces had played a role in the country's uranium enrichment program and manufacturing of nuclear-related equipment, as well as "alleged studies" in three technical areas: the Green Salt Project, concerning the conversion of uranium dioxide (UO₂) into uranium tetrafluoride (UF₄), referred to as green salt; tests related to high explosives, including the development of exploding bridgewire detonators (EBWs); and the design of a missile reentry vehicle.

Iran's alleged weaponization activities were consolidated under the "AMAD Plan" led by Mohsen Fakhrizadeh, a senior IRGC officer and nuclear physics professor. The IAEA assesses that the AMAD Plan was stopped abruptly pursuant to a "halt order" issued in late 2003 by senior Iranian officials -- presumably at the direction of Supreme Leader Ayatollah Ali Khamenei -- partly due to growing concerns in Tehran about the U.S.-led military campaign in Iraq. This occurred soon after Khamenei tapped Rouhani, then secretary of the Supreme National Security Council (SNSC), to become chief nuclear negotiator and manage the diplomatic fallout from the disclosures of Iran's clandestine nuclear activities. Notably, members of the SNSC's nuclear committee then included, in addition to Rouhani and several others, two officials who helped oversee aspects of the AMAD Plan: Minister of Defense and Armed Forces Logistics (MODAFL) Ali Shamkhani and MODAFL deputy Ali Hosseini Tash. After 2003, the IAEA states, some activities that were carried out under the AMAD Plan were resumed by Fakhrizadeh through new organizations that drew on resources from Iranian universities and continued to report to MODAFL.

In August 2007, Iran agreed to address questions about its PMD activities as part of a work plan with the IAEA, but the discussions ultimately broke down in September 2008 after senior Iranian officials cancelled meetings and visits. A technical briefing presented by the IAEA at the time found that Iran's stated need for EBWs was "not consistent with any application other than development of a nuclear weapon." Iran admitted to working on EBWs for conventional nonnuclear purposes and maintained that any allegations to the contrary were based on "forged documents" and "fabricated data."

Under the current Framework for Cooperation, Rouhani's negotiating team has provided additional information to the IAEA to substantiate its claims that "simultaneous firing of EBWs was tested for a civilian application," but the issue remains unresolved. On May 20, Iran also agreed, among other measures, to provide information to the IAEA related to Iranian modeling studies aimed at using explosives to compress and detonate the high-enriched uranium core of a nuclear weapon. Media reports suggest that the IAEA has delayed publication of new information concerning the military aspects of Iran's nuclear program so as not to derail Iran-P5+1 negotiations. The IAEA informed Iran on April 26 that it would conduct a broader "system assessment" of the PMD issues, which is unlikely to be finished before the July 20 JPOA deadline.

Domestic Constraints

On the domestic front, the Rouhani administration's ability to address PMD issues is constrained by the Supreme Leader's 2003 fatwa banning the "production" and "use" of nuclear weapons, but not explicitly a nuclear weapons capability. In addition, Rouhani must find a way to reconcile the transparency measures required under both the JPOA and the IAEA's Framework for Cooperation with Iran's highly compartmented nuclear activities and

fears of covert sabotage. According to Rouhani, student researchers at IRGC-linked institutions who have worked with Fakhrizadeh or other AMAD Plan-affiliated scientists have published studies that were intended to be hidden from the IAEA. As chief nuclear negotiator, Rouhani explained in a 2004 speech, "We had kept some things secret and thought nobody knew about them. Nevertheless, the same things that we had kept hidden unfortunately appeared in the form of master's and PhD dissertations or published scientific papers."

In 2008, Iran provided the IAEA a copy of an academic paper relating to EBW development work presented by two Iranian researchers, Darioush Rezaeinejad and Mojtaba Dadashnejad, at an electrical engineering conference. The paper was published under the auspices of Malek-Ashtar University of Technology, then headed by Fakhrizadeh, and had been presented at an earlier conference in China. Three years after Iran brought the paper to the attention of the IAEA, in July 2011, Rezaeinejad was assassinated outside his home in Tehran. Former head of the Atomic Energy Organization of Iran (AEOI) Fereydoun Abbasi-Davani, himself a survivor of an assassination attempt and a key scientist believed to have worked closely with Fakhrizadeh, has expressed concerns about the need to conceal information on Iran's nuclear program from the IAEA. In an interview with *Khorasan Daily*, he said, "Western intelligence agencies calibrate their moves based on the leaked IAEA reports and only by the reports they are able to size up the level of destruction they have exerted on our nuclear machinery and equipment."

Although Fakhrizadeh maintains a low profile, Abbasi is an ardent supporter of expanding Iran's nuclear capabilities and a vocal critic of Rouhani's negotiating efforts. Abbasi was removed from office in August 2013 soon after Rouhani's election, but he has not faded from the spotlight. In a May 3-4 conference titled "We're Worried" at the former U.S. embassy in Tehran, Abbasi said, "The [Rouhani administration] negotiators should not have given concessions on this issue." In response to rumors that Rouhani had fired nuclear scientists who opposed limits on Iran's nuclear program, AEOI spokesman Behrouz Kamalvandi acknowledged that Rouhani recently moved several officials but that "only a limited number of people were involved and they were neither scientists nor were they fired."

Implications

The IAEA's continuing assessment of PMD issues -- unlikely to be finished before the July 20 target deadline set by the JPOA -- is fundamental to achieving a verifiable, comprehensive agreement between Iran and the P5+1. Leaving the resolution of PMD issues until after a comprehensive agreement is reached could provide Iran more time to pursue illicit activities, including construction at the Parchin military complex, where high-explosives testing linked to nuclear detonators may have occurred. Alternatively, Tehran could decide to come clean on its past weaponization work and provide unfettered access to military sites and key individuals, such as Fakhrizadeh. Ratification of the IAEA's Additional Protocol by the Majlis, noted in the JPOA as an element of a comprehensive agreement, would ease the agency's verification activities, but it would not solve the problem posed by Iran's lack of full transparency and cooperation on closing the PMD file.

Additionally, Rouhani will need continued public support from Khamenei to manage the domestic political fallout from even a tacit acknowledgment of Tehran's past weaponization efforts, and to ultimately chart a different future for any implicated nuclear scientists. If, however, nuclear negotiations are extended beyond the July 20 JPOA deadline and Iran fails to make adequate progress with the IAEA on closing the PMD file, then Tehran will have grievously undermined the IAEA's verification mission and could create a dangerous precedent for other states of proliferation concern.

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