

VERIFYING SECTION T OF THE IRAN NUCLEAR DEAL: IRANIAN MILITARY SITE ACCESS ESSENTIAL TO JCPOA SECTION T VERIFICATION

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SUMMARY

The International Atomic Energy Agency (IAEA) made at best a general statement in its last quarterly reporting (spring 2017) about its monitoring and verification of Section T, annex 1 of the Joint Comprehensive Plan of Action (JCPOA). This innovative, key section closes a loophole in the Nuclear Non-Proliferation Treaty (NPT), explicitly banning Iran from undertaking certain nuclear weapons development activities and controlling dual-use equipment potentially usable in such activities. At the same time, the Iranian authorities have repeatedly stated that its military sites are off limits to the IAEA, indicating that the IAEA currently has limited or no access to Iranian military sites.¹ Such access is an essential part of a broader effort to verify Section T undertakings of Iran.

Discussions have frequently mischaracterized the verification of Section T (and associated access to military sites) as a problem of finding violations via national means and then reporting them to the IAEA for follow-up. In fact, the nature of the Section T conditions is analogous to verifying that allowed activities and equipment are not misused in a manner similar to verifying declared nuclear activities. Moreover, certain activities and equipment are subject to Joint Commission approval. It is likely that some of the conditions in Section T are not currently being met and may in fact be violated by Iran. If it has not already done so, the United States should also establish (1) a list of equipment in Iran controlled under Section T, including any that may currently be outside of required Section T controls and (2) a list of Iranian sites associated with Section T, either because of activities or equipment at these sites. The United States and other members of the P5+1 should press the IAEA to develop and establish an effective, credible verification regime under Section T that includes access to military sites and the sharing of relevant information. The United States and Britain, France, and Germany should also raise Section T and the likely need for approvals of certain Iranian equipment and activities at the next Joint Commission meeting. Toward that goal, Iran should declare to the IAEA its sites and equipment subject to Section T verification and approvals.

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1. For example, as reported by the Iranian regime's *Financial Tribune* on August 23, 2017, "Iranian officials have roundly ruled out the possibility of new inspections of military bases. Early August, Ali Akbar Velayati, a foreign policy advisor to the Leader of Islamic Revolution, said foreign access to these facilities would constitute a breach of the Islamic Republic's national security."

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INTRODUCTION

One of the most serious compliance issues concerns the IAEA's access to military sites and credible verification of Section T, which prohibits key nuclear weapons development activities and controls dual-use equipment potentially usable in such activities. In this report, the issue of verifying Section T is discussed. The absence of credible implementation and verification of Section T undermines the effectiveness of the JCPOA.

The IAEA has the authority under UN Security Council resolution 2231 to request access to sites and equipment associated with Section T. This resolution "requests the Director General of the IAEA to undertake the necessary verification and monitoring of Iran's nuclear-related commitments for the full duration of those commitments under the JCPOA." In addition, the resolution states: "The International Atomic Energy Agency will be requested to monitor and verify the voluntary nuclear-related measures as detailed in this JCPOA."

Between January 2016 and March 2017, the IAEA made no mention about verifying section T in the its quarterly reports on the Verification and Monitoring in the Islamic Republic of Iran in light of United Nations Security Council Resolution 2231 (2015). Likely in response to questions raised by members of the P5+1, the IAEA included a general statement in its June 2017 report, namely, "The Agency's verification and monitoring of Iran's other JCPOA nuclear-related commitments continues, including those set out in Sections D, E, S and T of Annex I of the JCPOA." However, this report provides no details on whether the IAEA actually verified Section T, or simply, for example, followed relevant publications indicating relevant activities in the open literature.

Although this report focuses on verification associated with Section T, IAEA access to military sites is also needed so that the IAEA can reach a broader conclusion under the Comprehensive Safeguards Agreement (CSA) and Additional Protocol (AP). Part of that determination involves ensuring the absence of nuclear weapons related work. This type of access is essential for the IAEA to resolve the IAEA's unanswered questions about, for example, the Parchin site and other locations and activities developed prior to Implementation Day. Under the CSA with Iran, the IAEA has the right to visit any site in Iran, whether military or civilian, in furtherance of its safeguards obligations to ensure that Iran is fully complying with its reporting obligations and the nuclear program is peaceful. Iran has challenged this right. This issue also needs to be acted upon by the United States.

SECTION T

Section T verification requires the establishment of a routine inspection approach, which takes into account provisions for access to sensitive locations. Unlike the visits associated with the [Parchin site](#)² or past nuclear weapons work, which are fundamentally based on alleging a violation, the verification of Section T conditions is similar to routine inspections of declared nuclear facilities, such as the Natanz enrichment plant. Like those routine inspections at enrichment plants, Section T verification should not be based on alleging violations but instead on ensuring compliance by regular IAEA monitoring. This last point is important because discussions have frequently mischaracterized the verification of Section T as a problem of finding violations via national means and then reporting them to the IAEA for follow-up. In fact, the nature of Section T conditions is analogous to verifying that allowed activities and equipment are not misused, as is common to many aspects of IAEA safeguards at declared nuclear sites. Inspectors do not go to the Natanz enrichment plant because of allegations

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2. David Albright, Sarah Burkhard, Olli Heinonen, Allison Lach, and Frank Pabian, "Revisiting Parchin: With plenty of evidence of past Iranian nuclear weapons activity at Parchin, the IAEA needs to revisit the site," Institute for Science and International Security, August 21, 2017. <http://isis-online.org/isis-reports/detail/revisiting-parchin>

that Iran is secretly producing highly enriched uranium; they go there routinely to provide confidence that Iran is living up to its commitments not to produce enriched uranium outside of safeguards and within the parameters set by the JCPOA. Although Section T conditions have not been institutionalized under traditional safeguards, their inclusion in the JCPOA was a recognition of the need to do so and Iran's obligation to cooperate in fulfilling these commitments.

Section T of Annex 1 of the JCPOA contains commitments not to engage in nuclear weaponization activities. In particular, under Section T, Iran has committed that it will not engage in the following activities, which could contribute to the design and development of a nuclear explosive device:

- 82.1. Designing, developing, acquiring, or using computer models to simulate nuclear explosive devices.
- 82.2. Designing, developing, fabricating, acquiring, or using multi-point explosive detonation systems suitable for a nuclear explosive device, unless approved by the Joint Commission for non-nuclear purposes and subject to monitoring.
- 82.3. Designing, developing, fabricating, acquiring, or using explosive diagnostic systems (streak cameras, framing cameras and flash x-ray cameras) suitable for the development of a nuclear explosive device, unless approved by the Joint Commission for non-nuclear purposes and subject to monitoring.
- 82.4. Designing, developing, fabricating, acquiring, or using explosively driven neutron sources or specialized materials for explosively driven neutron sources.

To verify Section T, the IAEA will need to ask Iran to describe or declare in writing its capabilities associated with each activity or each piece of equipment covered in each of the four subsections. IAEA access would be part of verifying these declarations.

Iran may deny having any such capabilities, a statement which the IAEA would also have to verify. However, based on open sources and IAEA reporting, Iran is known to have engaged in activities covered by Section T, in particular subsection 82.2, and acquired equipment that falls under subsection 82.3.

It is likely that some of the conditions in Section T are currently not being met and may in fact be violated by Iran.

SUBSECTION 82.2

Subsection 82.2 involves multi-point explosive detonation systems. **According to the December 2, 2015 IAEA report (paragraphs 44 and 45), Iran has acknowledged that it has been, and likely still works with non-nuclear multi-point detonation applications. Moreover, according to paragraph 46 of this report: “The IAEA assesses that the MPI [multi-point initiation] technology developed by Iran has characteristics relevant to a nuclear explosive device, as well as to a small number of alternative applications.” Neither the IAEA nor the Joint Commission has reported that Iran asked and/or received the approval from the Joint Commission for any on-going multi-point initiation work.** There is also no indication that the IAEA has asked for access to monitor activities in locations it knows or believes that such work took place previously or may be taking place today.

In addition, the IAEA has reported on a range of sites that have conducted studies possibly relevant to nuclear explosives and covered by Section T, such as the Parchin military complex and at the Vandar site. Other possible locations associated with Section T are so-called Lavizan-2, the Lavizan-Shian area, and Malek Ashtar University campuses in Tehran and Isfahan, as well as some entities of Defense Industries Organization.

SUBSECTION 82.3

Subsection 82.3 involves the use of equipment suitable for the development of a nuclear explosive device. **Iran may now be using such equipment without Joint Commission approval and IAEA monitoring. The United States its allies, and the IAEA, should investigate Iran's procurement of equipment covered by subsection 82.3.**

Open source information shows that Iran procured such equipment in the past and may still be using this equipment. For example, via a German broker, Iran purchased two Russian-origin high-speed cameras that have important applications in a nuclear weapons program.³ These streak cameras, if still being used in Iran, require Joint Commission approval and monitoring. Based on declassified telexes in which Iran sought or acquired a wide range of goods for its military nuclear programs in the early 1990s, Iran also sought ballistic range cameras.⁴ Although this particular camera was designed primarily for exterior and terminal ballistics tests, experts have accessed that it can be adapted for use in testing the initiation and detonation of high explosives, potentially relevant to nuclear explosives.⁵ There are also open source indications that Iran may have acquired flash x-ray systems and other high-speed cameras, which may have been shipped to Iran through the U.K., and that it purchased an oscilloscope and pulse generators from a U.S. firm.⁶

Public information shows that the IAEA has information about past procurements possibly covered by Section T. The IAEA reportedly has seen or learned of equipment covered by section 82.3 as part of its study of Iran's technical open source literature, past visits to Parchin, and its efforts under the Road Map created with Iran that were part of the IAEA's Possible Military Dimensions (PMD) investigations. According to the IAEA, Iran's military Physics Research Center or its successor the Institute of Physics at Lavisan made enquiries in 2001 for high speed cameras from DRS Hadland in the United Kingdom and Photonics in Germany.⁷

There are no public suggestions that the Joint Commission gave Iran approval for the use of any of these types of equipment or that the IAEA has asked to monitor any equipment associated with section T or locations where

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3. David Albright and Christina Walrond, "The Trials of the German-Iranian Trader Mohsen Vanaki: The German Federal Intelligence Service Assesses that Iran Likely Has a Nuclear Weapons Program," Institute for Science and International Security, December 15, 2009 (Revised September 16, 2009 with more details about the companies, procurements, and judicial process). http://isis-online.org/uploads/isis-reports/documents/MohsenCaseStudy_update_15Dec2009.pdf

4. David Albright, Paul Brannan, and Andrea Stricker, *The Physics Research Center and Iran's Parallel Military Nuclear Program*, Institute for Science and International Security, February 23, 2012. http://isis-online.org/uploads/isis-reports/documents/PHRC_report_23February2012.pdf

5. Ibid.

6. Andrew Koch and Jeanette Wolf, *Iran's Nuclear Facilities: a Profile*, Center for Nonproliferation Studies, 1998, citing Michael Eisenstadt, *Iranian Military Power: Capabilities and Intentions* (Washington, D.C.: The Washington Institute for Near East Policy, 1996), p. 109; James V. Grimaldi and David Greenwald, "Some Gear Legally Shipped by Firm Went to Agency Linked to Iranian Military," *The Orange County Register*, August 30, 1991, p. D6; Marcy Gordon, "U.S. Exported Software, Parts to Iran, Syria, Records Show," *The San Francisco Chronicle*, August 8, 1991, p. A2.

7. *The Physics Research Center and Iran's Parallel Military Nuclear Program*, op. cit.

it knows such equipment existed. It is also unclear whether the Joint Commission or the IAEA have asked Iran whether it possesses and uses such equipment.

NORTH KOREAN COOPERATION

Given Iran's relationship with North Korea on military matters, including nuclear capable ballistic missiles, the Joint Commission and the IAEA should ask Iran in writing whether it cooperates with other states, e.g. North Korea, on activities associated with subsections 82.1, 82.2, and 82.4. In particular, Iran should go on record whether it conducts any such activities outside of Iranian territory.

RECOMMENDATIONS

The United States should assemble, if it has not already done so, its own lists of equipment and locations relevant to Section T. It should also prepare lists suitable for sharing with the IAEA or Joint Commission. Similarly, U.S. allies should share relevant information with the IAEA. If it has not done so, the IAEA should create a baseline of Section T activities and equipment.

The United States and its allies should press the IAEA to develop and establish an effective, credible verification regime under Section T that includes requests to access military sites. The United States and the EU3 should also raise Section T and the likely need for approvals of such equipment and activities by Iran at the next Joint Commission meeting. Toward that goal, Iran should declare to the IAEA its sites and equipment subject to Section T verification and approvals.