



Analysis of the IAEA's Seventh Iran Nuclear Deal Report: Still Little Detail and Potential Verification Problems

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September 1, 2017

On August 31, 2017, the International Atomic Energy Agency (IAEA) released its seventh [report](#) on its verification and monitoring of the Iran nuclear deal in light of United Nations Security Council (UNSC) resolution 2231 (2015). UNSCR 2231 codified into international law the Joint Comprehensive Plan of Action (JCPOA). The latest IAEA report again states: “Since 16 January 2016 (JCPOA Implementation Day), the Agency has verified and monitored Iran’s implementation of its nuclear-related commitments in accordance with the modalities set out in the JCPOA...” The quarterly report does not report any violations of the JCPOA during this reporting period, although the report is so sparse in details that one cannot conclude that Iran is fully complying with the JCPOA. Moreover, nowhere in the report does the IAEA state that Iran is fully compliant with the JCPOA, and it should not make that judgement in any case. The issue of judging full compliance is rightly the responsibility of the Joint Commission and governments, in particular those in the P5+1. However, this report and its predecessors suffer from a lack of reporting on known compliance controversies and even some violations, albeit minor ones, involving centrifuge research and development.

This IAEA report again omits a considerable amount of important information of a type it provided prior to Implementation Day. It also omits or skirts known controversies over Iranian compliance with specific provisions of the JCPOA. It is deficient in reporting on the verification and monitoring of the JCPOA, including Section T, which entails access to Iranian military sites associated with banned nuclear weapons development activities and associated, controlled dual-use equipment. It also does not discuss its activities to visit a number of sites under complementary access arrangements provided in Iran’s Additional Protocol (AP) to the Comprehensive Safeguards Agreement (CSA).

One new piece of information is that IAEA officials were [publicly quoted](#) by Reuters in a story published on August 31, 2017, the same day as the IAEA Iran report was released, stating that the inspectors have not visited any Iranian military sites since Implementation Day. The lack of access to military sites, which is a major deficiency in the JCPOA’s verification, is not discussed in the IAEA’s report, but the IAEA should have included reporting on this important issue.

In general, the IAEA should be reporting much more fully to member states on Iranian behavior under the JCPOA. Member states depend on this reporting to determine whether Iran is complying with the JCPOA. However, this report provides so little information that it barely warrants our own analysis and increasingly looks to be a politically motivated document to deflect discussion of problems in the JCPOA, possibly resulting from Iranian intimidation or a misplaced fear about the deal's survival.

No Visits to Military Sites Since Implementation Day

Officials from the IAEA stated in the Reuters [story](#) of August 31, 2017, "The IAEA has not visited an Iranian military facility since the agreement was implemented because it has had 'no reason to ask' for access..." Iran has recently [stated](#) on a number of occasions publicly and to the media that it will not allow inspector access to any of its military facilities, calling such requests "a dream." In response, U.S. Ambassador to the UN Nikki Haley [wrote](#) on Twitter, "If Iran rejects a valid request for inspections, then the nuclear deal, is as they say, 'merely a dream.'" The Associated Press on August 31, 2017 [quoted](#) the Director General of the IAEA, who stated that under monitoring conditions accepted by Iran, the IAEA "has access to (all) locations without making distinctions between military and civilian locations as it works to ensure that Iran doesn't have hidden nuclear activities.

However, the question remains why does the IAEA not go to military sites? Once again, the issue of the IAEA's visits to military sites in Iran is not discussed in this quarterly report. This lack of access undermines any statement that the IAEA is able to verify the JCPOA. Access to military sites is necessary to verify limits on Iran's centrifuge production, judge adherence to nuclear weaponization development bans and associated equipment controls in the JCPOA, and more broadly gain answers about alleged past and possibly on-going nuclear weapons work.

Access to military sites is in particular necessary to verify Section T, Annex 1, of the JCPOA, which as we explained in an August 31, 2017 [report](#) titled "Verifying Section T of the Iran Nuclear Deal: Iranian Military Site Access Essential to JCPOA Section T Verification," explicitly bans Iran from undertaking certain nuclear weapons development activities and controls dual-use equipment potentially usable in such activities. The report, by Albright and Olli Heinonen, stated:

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.

The report recommended that the IAEA establish in cooperation with Iran and IAEA member states (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.

It also stated that 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.

We continue to urge fuller reporting by the IAEA on Iran's compliance with the JCPOA, including previously included technical data, at-issue verification concerns, and details about the IAEA's efforts to verify weaponization development bans and controls and reach a broader conclusion about the peacefulness of Iran's nuclear program. We also urge the IAEA to credibly verify Section T and access military sites as needed and as is the IAEA's right. Any failure to do so undermines the IAEA's ability to ensure Iran's compliance with the JCPOA and reach a credible broader conclusion in Iran. Without substantial access to military sites, there will be suspicions that any such future conclusion will be superficial. It also sets negative precedents for future IAEA verification efforts or arms control agreements in states that are found to be in noncompliance with their safeguards agreements.

Findings and Analysis

- 1)** Iran had less than 130 metric tonnes of heavy water inside Iran as of August in this reporting period. However, since the previous IAEA report, Iran may have surpassed the 130 metric tonnes cap on heavy water imposed by the JCPOA if the cap is interpreted as including heavy water inside and outside Iran that is under Iranian control. The IAEA does not explain whether it distinguishes between Iran's stock of heavy water inside and outside of Iran, but implies that it only considers heavy water physically inside Iran as part of the 130 metric tonnes cap and not all the heavy water under Iran's control. In June 2017, Iran transferred 19.1 metric tonnes of heavy water outside Iran, and the IAEA verified that this amount of heavy water was still at its destination outside Iran between July 16 and 20. The location of the 19.1 metric tonnes of heavy water is likely the previous consignment point in Oman. No information is included in the report about a buyer for the heavy water but public information supports that this full amount was still in Oman during August. The IAEA verified on August 7, 2017 that Iran's stock of heavy water (apparently inside Iran) was 111 metric tonnes. The total stock of heavy water under Iran's control may have reached 130.1 metric tonnes in August, or slightly above the cap, under a more comprehensive, and realistic, interpretation of the cap.
- 2)** This practice of holding heavy water in consignment in Oman should be ended and Iran should be held to a strict standard of no more than 130 metric tonnes of heavy water,

whether inside or outside Iran.¹ Any heavy water in excess of 130 metric tonnes, including that held overseas under Iranian control, should be blended down.

- 3) Iran restarted its previously shut down Heavy Water Production Plant (HWPP), which was verified by the IAEA on August 7, 2017. The plant was shut down during the last reporting period despite earlier, false claims that such a shutdown would cause irreversible damage and thus could not be done. Iran does not need more heavy water and should shutter this plant permanently.

The IAEA claims in its report in a minor comment that it is verifying and monitoring “Sections D, E, S and T” in Annex 1 of the JCPOA. There is no other comment on its efforts to verify and monitor Section T, which includes nuclear weaponization development bans and controls over associated dual-use equipment. Moreover, the IAEA includes no information about visits to sites or monitoring of specialized equipment that would provide insight into its Section T verification effort. Given that the IAEA officials publicly stated the inspectors have not visited any Iranian military sites since Implementation Day, it is doubtful if the effort to verify or monitor Section T is credible or effective. In fact, it is likely that some of the requirements of Section T are not being met and Iran may today be in violation of Section T, as discussed in our report and above.

- 4) The IAEA report suggests that during the last quarter, it has monitored Iran’s operation of hot cells at the Tehran Research Reactor and the Molybdenum, Iodine and Xenon Radioisotope Production (MIX facility) and did not detect any reprocessing activities at those sites. Iran also operates hot cells at other locations not described in the report, at sizes larger than that allowed in the JCPOA, pursuant to a Joint Commission decision. The IAEA should describe Iran’s use of these hot cells and expand on its own efforts to monitor them, including describing their locations, in its quarterly reporting.
- 5) The IAEA reports that it has not again attended a meeting of the Procurement Working Group (PWG), which [oversees](#) procurements by Iran of nuclear and nuclear-related commodities. These meetings happen every three weeks. Non-attendance would imply that there were no proposals for exports to Iran of nuclear goods (Part 1 goods), including natural uranium.
- 6) Iran has produced a small quantity of low enriched uranium (LEU) at the Natanz Fuel Enrichment Plant (FEP) during this reporting period. The newly produced amount of LEU is estimated below as about 11.1 kilograms (kg) (uranium mass), for a total of 88.4 kg of LEU (uranium mass) enriched up to 3.67 percent (see below for discussion of fuzzy math on the total value). This 11.1 kg of LEU (uranium mass) is equivalent to almost 17 kg of LEU hexafluoride. In theory, the FEP could produce up to 100 kg of LEU

¹ For more information on Iran’s heavy water and related issues, see *Heavy Water Loophole in the Iran Deal*, by David Albright and Andrea Stricker, Institute for Science and International Security, December 21, 2016. <http://isis-online.org/isis-reports/detail/heavy-water-loophole-in-the-iran-deal>

hexafluoride per month, still indicating that Iran may be exploiting a loophole in the JCPOA and enriching a considerable amount of natural uranium using its existing stocks of depleted uranium.

- 7) The IAEA reports that during the reporting period, Iran's total enriched uranium stockpile "has not exceeded 300 kg of UF₆ enriched up to 3.67% U-235 (or the equivalent in different chemical forms). The quantity of 300 kg of UF₆ corresponds to 202.8 kg of uranium." However, as discussed before, this value can exclude stocks of LEU based on Joint Commission decisions about exactly what LEU to include in the total.

The IAEA again does not report on the total amount of LEU in Iran, whether enriched less than 5 percent or near 20 percent enriched. Moreover, the IAEA again reports as though some of this LEU does not exist, based on Joint Commission decisions to exempt it from the limits. For example, LEU in low level waste is exempted, and some of the LEU in or from the Enriched UO₂ Powder Plant (EUPP) may not be counted as well. One knows that the IAEA does not apply such lax or political accounting practices in its normal safeguards operations. The amount of LEU exempted should be reported, as should the total amount of LEU in Iran.

The IAEA uses fuzzy math to define the amount of LEU in Iran subject to the 300 kg cap. This can be seen by the way the IAEA reports on the quantity of LEU in Iran enriched up to 3.67 percent, namely "88.4 kg, based on the JCPOA and decisions of the Joint Commission." The actual amount is greater than that given by the IAEA and includes exempted quantities of LEU, although we cannot tell by how much. With a recognition that the total LEU stock is in fact larger, the IAEA reports the status and quantities of enriched uranium in Iran that it includes under the cap as:

88.4 kg of uranium enriched up to 3.67% U-235 (up from previous report's figure of 79.8 kg), including:

- a. 77.8 kg of uranium in the form of UF₆ (previous report was 66.7 kg, reflecting an increase of 11.1 kg likely representing new LEU production in the FEP (see above));
- b. 1.0 kg of uranium in the form of UO₂ (previous report was 0.9 kg, reflecting a minor increase);
- c. 5.5 kg of uranium in fuel assemblies and rods (down from 9.7 kg);
- d. 3.8 kg of uranium in liquid and solid scrap (up from 1.3 kg); and
- e. 0.3 kg of enriched uranium in hold up at the EUPP (down from 1.2 kg).

- 8) Iran continues to have a greater than expected failure rate of its IR-1 centrifuges that are in operation at the FEP. During the reporting period, it withdrew 57 IR-1 centrifuges from those held in storage for the replacement of damaged or failed IR-1s. Only about 40-60 IR-1 centrifuges per year would be expected to fail at Iran's current rate of LEU production, or roughly 10-15 IR-1 centrifuge failures during this reporting period. This much larger number of failures implies that most of the enrichment occurring at the FEP

involves producing natural uranium from depleted uranium or Iran is experiencing a much larger IR-1 failure rate than typical. To clarify this situation, the IAEA should report how much natural uranium Iran has produced per month from depleted uranium.

- 9) The IAEA again provides no information on compliance controversies about: Iran's operation of more advanced centrifuges than allowed; production of significantly more rotor tubes and bellows than used in operating advanced centrifuges; Iran's exploitation of quality assurance limits to further test advanced centrifuges; questions on its production of rotor tubes and bellows outside of declared equipment manufacturing sites; or excessive numbers of centrifuge parts manufactured in general. We have gathered information on these issues and reported on them in our [previous](#) IAEA report analysis and in other [Institute reports](#).