



The IAEA's Iran NPT Safeguards Report - November 2021

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November 17, 2021

The Director General remains deeply concerned that nuclear material has been present at three undeclared locations in Iran and that the current locations of this nuclear material are not known to the Agency. The Director General is increasingly concerned that even after more than two years the safeguards issues related to the four locations in Iran not declared to the Agency remain unresolved.

-International Atomic Energy Agency (IAEA) Director General Rafael M. Grossi

This analysis summarizes and assesses information in the IAEA's periodic safeguards report, *NPT (Nuclear Non-Proliferation Treaty) Safeguards Agreement with the Islamic Republic of Iran*, the most recent of which was issued on November 17, 2021. The IAEA reports that Tehran continues to stonewall its investigation into Iran's undeclared nuclear material and activities and has not cooperated regarding the agency's detection of man-made uranium particles at three undeclared sites or answered questions about the use of nuclear material at a fourth site. In the latest report, the IAEA director-general underscores, "even after more than two years the safeguards issues related to the four locations in Iran not declared to the Agency remain unresolved."

The IAEA also reports that Iran has physically harassed and attempted to intimidate agency inspectors upon entry to nuclear facilities. *The Wall Street Journal* reported in September that male security guards had harassed female IAEA inspectors on four to seven occasions.² Iran cited new security procedures. Iran appears to have continued the practice, despite IAEA warnings that the information would be included in its NPT compliance report. Iran responded to the agency that "there is no ground or legal basis for reporting such matters to the Board of Governors." The IAEA reports that it advised Iran that its security procedures violate the "Agreement on the Privileges and Immunities of the IAEA, to which Iran is a party, and that their implementation prevents Agency inspectors from effectively discharging their functions as provided for under the Safeguards Agreement."

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² Laurence Norman, "Iranian Guards Physically Harassed Female UN Nuclear Inspectors, Diplomats Say," *The Wall Street Journal*, September 14, 2021, <https://www.wsj.com/articles/iranian-guards-physically-harassed-female-u-n-nuclear-inspectors-diplomats-say-11631626649>.

The IAEA Board of Governors will next meet from November 24 to 26. Since June 2020, the Board has not passed a new resolution regarding Iran's lack of cooperation with the IAEA, which would provide the IAEA with needed support to pursue Tehran's compliance with its legal nonproliferation obligations. By withholding action, the Board appears overly concerned with re-starting talks aimed at reviving the Joint Comprehensive Plan of Action (JCPOA) rather than demanding Iran redress fundamental NPT violations and non-compliance. It is unlikely that Iran will cooperate on these outstanding issues if it receives sanctions relief under the JCPOA.

The Board should pass a new resolution demanding Iran's compliance and cooperation with the IAEA, including that Iran uphold its obligations regarding agency privileges and immunities during inspections. It should add a condition that if Tehran fails to cooperate, the Board will schedule a special board meeting to more fully redress Iran's long running and egregious non-compliance with its NPT obligations.

During an October 2021 appearance in Washington, D.C., Director-General Grossi voiced agreement that censuring Iran at the upcoming board meeting would make sense.³ This is in line with the authors' general observation that the IAEA Secretariat has been sounding warning bells in line with its practices as an impartial, technical international organization, but the Board has not responded in ways it has in the past.

New Developments Regarding Four Locations of Concern⁴

Location 1: Turqz-Abad warehouse

The agency reports "no interactions between the Agency and Iran" regarding Location 1, and therefore the safeguards issues relating to the location remain unresolved.

Location 1 is an open-air warehouse in the Turqz-Abad district of Tehran which held cargo containers and other items that purportedly contained nuclear-related equipment and material.⁵ In 2018, the IAEA observed activities consistent with sanitization of the site. Commercial satellite imagery confirms this activity and documents Iran's earlier, speedy removal of all shipping containers and scraping of the grounds.⁶

³ "Live Interview with International Atomic Energy Agency Director General Rafael Grossi," *Stimson Center*, October 22, 2021, <https://www.stimson.org/2021/live-interview-with-international-atomic-energy-agency-director-general-rafael-grossi/>.

⁴ For fuller descriptions of these four locations and their relationship to today, see David Albright with Sarah Burkhard and the Good ISIS Team, *Iran's Perilous Pursuit of Nuclear Weapons* (Washington, D.C.: Institute for Science and International Security Press, 2021).

⁵ John Irish and Arshad Mohammed, "Netanyahu, in U.N. Speech, Claims Secret Iranian Nuclear Site," *Reuters*, September 27, 2018, <https://www.reuters.com/article/us-un-assembly-israel-iran/netanyahu-in-un-speech-claims-secret-iranian-nuclear-site-idUSKCN1M72FZ>.

⁶ The IAEA's September 2021 report indicated that the agency only began observing Iran's relocation of cargo containers and sanitization activities in November 2018. Yet, the agency was informed of these activities prior to the summer of 2018 and did not request to visit the site until Iran had completely emptied and sanitized it. See: David Albright, Sarah Burkhard, Olli Heinonen, and Frank Pabian, "Presence of Undeclared Natural Uranium at the

The IAEA requested access to the site and took environmental samples in February 2019, nevertheless detecting processed natural uranium particles that Iran had potentially produced through undeclared uranium conversion activities. Through additional analysis, and as conveyed to Iran in September 2020, traces of isotopically altered uranium particles were detected as well, including “low enriched uranium with a detectable presence of U-236, and of slightly depleted uranium.” A footnote in the September 2021 IAEA report stated that “that the compositions of these isotopically altered particles were similar to particles found in Iran in the past, originating from imported centrifuge components.”⁷

The September 2021 IAEA report also included more detail about the containers once present at the site, stating that there were indications the “containers that had been stored at this location had contained nuclear material and/or equipment that had been heavily contaminated by nuclear material. The Agency also assessed that while some of the containers at Location 1 were dismantled, others were removed from the location intact in 2018 and moved to an unknown location.” This finding corresponds with evidence available from commercial satellite imagery.

Location 2: Lavizan-Shian

The IAEA reports regarding Location 2 that it conducted new verification activities from November 14 to 16 “at a declared facility in Iran where uranium metal had been produced previously. The purpose of these activities was to verify whether the natural uranium in the form of a metal disc that may have been used at Location 2 was present at this declared facility.” The IAEA is still evaluating the results of its activities.

In September 2020, the IAEA visited what the Institute identified as the Jabr Ibn Hayan Multipurpose Laboratory (JHL) at the Tehran Nuclear Research Center to conduct verification activities related to Iran’s past uranium metal production. According to the IAEA, “The purpose of these additional activities was to verify whether the natural uranium in the form of a metal disc identified at Location 2 was present at this declared facility.” The IAEA’s findings from that visit were inconclusive, therefore it may have decided to visit the site again.

Location 2 is Lavizan-Shian, a former headquarters of Iran’s nuclear weapons program and a key site during the Amad Plan, Iran’s crash nuclear weapons program to build five nuclear weapons in the early 2000s.⁸ Iran razed the site in 2003 and 2004 as the IAEA’s investigation into its

Turquz-Abad Nuclear Weaponization Storage Location,” *Institute for Science and International Security*, November 20, 2019, <https://isis-online.org/isis-reports/detail/presence-of-undeclared-natural-uranium-at-the-turquz-abad-nuclear-weaponiza>.

⁷ IAEA Director General, *NPT Safeguards Agreement with the Islamic Republic of Iran*, GOV/2021/42, September 7, 2021, <https://www.iaea.org/sites/default/files/21/09/gov2021-42.pdf>.

⁸ *Iran’s Perilous Pursuit of Nuclear Weapons*.

covert nuclear program intensified.⁹ The IAEA seeks information from Tehran about “the possible presence at this site between 2002 and 2003 of natural uranium in the form of a metal disc, with indications of it having undergone drilling and processing...” This metal disc was apparently part of nuclear weapons related work detailed in Iran’s Nuclear Archive, portions of which were seized in 2018 by Israel and turned over to the IAEA. Among the files was information about Iran’s work on producing uranium deuteride for a neutron initiator used in nuclear weapons. The information detailed procedures Tehran used to make uranium deuteride, including drilling into a piece of uranium metal.¹⁰

A photo from Iran’s Nuclear Archive obtained by the media and shared with the Institute shows a glove box containing a drilling machine, with what appears to be a black object that could be the uranium metal disc at issue. However, from the archive files and information available to the Institute, the location for this work could not be pinpointed, but Israel did not share some files publicly due to their proliferation-sensitive nature.

Location 3: Tehran Plant

The agency reports “no interactions between the Agency and Iran” regarding Location 3, and therefore the safeguards issues relating to the location remain unresolved.

Location 3 is identified in Iran’s Nuclear Archive as the Tehran Plant, a secret former pilot uranium conversion plant under the Amad Plan.¹¹ The IAEA corroborated archive evidence that Iran may have used the site for “possible use or storage of nuclear material and/or conducting of nuclear-related activities, including research and development activities related to the nuclear fuel cycle. This location may have been used for the processing and conversion of uranium ore, including fluorination, in 2003,” the IAEA added. Iran demolished the site in 2004.

The IAEA originally asked for access to the site in January 2020, but Iran refused until August 2020. The IAEA took environmental samples, indicating the presence of undeclared man-made uranium particles.

In its September 2021 report, the IAEA reported additional information, including that Iran removed containers from the site in 2004 and that “there are indications, supported by the results of the environmental samples analysis, that containers moved from Location 3 were subsequently also present at Location 1 [Turqz-Abad].” It further reported that the results of

⁹ 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, https://isis-online.org/uploads/isis-reports/documents/PHRC_report_23February2012.pdf See also *Iran’s Perilous Pursuit of Nuclear Weapons*.

¹⁰ “Iran’s Uranium Deuteride Neutron Initiator,” *Institute for Science and International Security*, May 13, 2019, <https://isis-online.org/isis-reports/detail/neutron-source-irans-uranium-deuteride-neutron-initiator-1/>.

¹¹ *Iran’s Perilous Pursuit of Nuclear Weapons*, Chapters 8 and 12; and David Albright, Sarah Burkhard, and Frank Pabian, “The Amad Plan Pilot Uranium Conversion Site, Which Iran Denies Ever Existed,” *Institute for Science and International Security*, November 9, 2020, <https://isis-online.org/isis-reports/detail/the-amad-plan-pilot-uranium-conversion-site/8>.

the samples from Location 3 “would not explain all of the particles identified by the analytical results of the environmental samples taken at Location 1.” This finding is in line with Israel’s claim that Location 1 was a storage location for a wide variety of equipment related to Iran’s undeclared nuclear activities.

Location 4: Marivan Site

The IAEA reports regarding Location 4 that “Iran has yet to provide an explanation for the presence of anthropogenic uranium particles at Location 4 and to answer the Agency’s original questions dating from August 2019.” The IAEA attempted to engage Iran regarding Location 4 in September 2021, providing Iran with “graphics based on commercially available satellite imagery that illustrated the activities identified by the Agency as inconsistent with Iran’s statement that there had been no activity at this location between 1994 and 2018.” In an October reply, Iran stated, “‘only the mining activities, which were main activities at this location, have been stopped during the said period’ and that the activities observed at the location had involved guards ‘to secure the properties at location.’”

Per the September 2021 IAEA report on Iran, the IAEA stated it would contact another member state to seek “clarification and confirmation” in response to information provided by Iran that “included a reference to activities conducted at Location 4 in the past by an organization from another Member State.” The member state responded that “the information provided by Iran had contained ‘no information indicating a link’ between the cooperation provided by the aforementioned organization in Iran, mentioned in the supporting documentation provided by Iran, ‘and the anthropogenic uranium particles found by the Agency.’”

Location 4 is the formerly secret Marivan site, near Abadeh, another Amad Plan facility identified in the Nuclear Archive.¹² The IAEA noted in its previous report that Location 4 “consists of two proximate areas where the Agency found indications that Iran had, in 2003, planned to use and store nuclear material.” In one area, “where outdoor, conventional explosive testing may have taken place,” the agency found “indications relating to the testing of shielding in preparation for the use of neutron detectors in that same area.” In the second area, from July 2019 onwards, “the Agency observed via commercial satellite imagery, activities consistent with efforts to sanitize the area, including the demolition of buildings.”

Along with the Tehran site, the IAEA sought access to Marivan in January 2020, but Iran refused. Iran finally granted access in August 2020, and the IAEA took environmental samples that revealed the presence of uranium particles.

The IAEA reported in its September 2021 report that in addition to explaining the presence of uranium, Iran must also provide answers regarding “the source of the neutrons that the

¹² David Albright, Sarah Burkhard, and Frank Pabian, “Abadeh is Marivan: A Key, Former Secret Nuclear Weapons Development Test Site,” *Institute for Science and International Security*, November 18, 2020, <https://isis-online.org/isis-reports/detail/abadeh-is-marivan-irans-former-secret-nuclear-weapons-development-test-site>.

neutron detectors were to measure” at Location 4. Iran has only provided unsubstantiated information about activities at Location 4, which the IAEA dismissed.

Modified Code 3.1

The IAEA reports no new progress on Iran’s pledge to work toward a solution over its unilateral decision to stop implementing Modified Code 3.1 of the subsidiary arrangements to its Comprehensive Safeguards Agreement. Iran informed the IAEA in February 2021 that it had stopped the implementation of Modified Code 3.1, which entails notifying the IAEA as soon as a decision is taken to build a new nuclear facility. The IAEA again reminded Iran that modified Code 3.1 is a legal obligation that “cannot be modified unilaterally and that there is no mechanism in the Safeguards Agreement for the suspension of implementation of provisions agreed to in the Subsidiary Arrangements.”