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IMAGERY BRIEF

Parchin after Implementation Day: When Will the IAEA Go?

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Despite the passage of Implementation Day, the International Atomic Energy Agency (IAEA) was unable to form a conclusion about the nuclear weapons related activities that took place at a site in the Parchin Military Complex. Although the IAEA found that Iran did have a nuclear weapons program at least until 2009, it made that conclusion without understanding large parts of Iran's alleged work on nuclear weapons or establishing a precedent for its inspectors to access military sites and personnel to verify past or possibly on-going nuclear weapons-related activities. This uncertainty undermines the credibility of its verification efforts. Is the IAEA going to re-visit the Parchin site? If so, when? And will IAEA inspectors be granted physical access to the site in order to take environmental samples given that the ones taken by Iranians without the presence of IAEA inspectors were inconclusive? Moreover, Iran has committed under the Joint Comprehensive Plan of Action (JCPOA) not to conduct high explosive activities related to the development of a nuclear explosive device, including the type of high explosive testing alleged to have occurred at Parchin. The IAEA needs to demonstrate that it can verify these JCPOA commitments, including accessing military sites like Parchin, where such activities could routinely take place.

In the December 2, 2015 *Final Assessment on Past and Present Outstanding Issues Regarding Iran's Nuclear Programme*, the IAEA made very limited additional progress on understanding Iranian nuclear weapons-related activities at the Parchin site. The main reason continued to be Iran's limited cooperation and continued denials and obfuscation. The IAEA's only determination about Parchin was that the evidence did not support Iran's claim that the building of interest was used as storage for chemical explosives, in essence confirming the well-known fact that Iran is not telling the truth about its nuclear weapons-related activities. Although there was hope by many that the limited environmental samples taken by Iran under the IAEA's direction would clarify this issue, they did not. Although the IAEA identified two particles that appear to be "chemically man-made particles of natural uranium," it did not make a definitive conclusion about the use of nuclear material at the site. It only stated that the number of particles with this specific composition was not enough to assert the use of nuclear material there, providing in the report no further explanation for their presence. Overall, in this December report, the IAEA was not able to draw conclusions about the activities that occurred at the Parchin site.

One reason for the inconclusive results, according to senior officials close to the IAEA, is concern that the two chemically man-made uranium particles were the result of cross-contamination. More specifically, the IAEA could not rule out that the uranium particles were brought into the Parchin site by Iranian scientists that also work at different nuclear sites where uranium is present.

The cross-contamination issue highlights the need for collecting new samples at Parchin, and this time by IAEA inspectors themselves. Ambiguous results from environmental sampling would normally lead to taking more samples, perhaps in this case also by taking them from adjacent areas or buildings. Given that it appears that Iran was able to outlast the IAEA and undermine its inspections, lack of follow-up

only further undermines the IAEA's credibility. To rectify this weakness in the verification of safeguards agreements, and by implication the JCPOA, the IAEA should re-visit Parchin. Its inspectors should perform the sampling themselves, not Iranians who may cross-contaminate the samples. The physical presence of trained, experienced inspectors, with the ability to investigate the buildings up close, is critical to detecting the best places to sample, particularly in the case of a country that has a history of violating its safeguards obligations. Iran's efforts to undermine IAEA safeguards arose in early 2012, when Iran not only denied the inspectors access to the site but subsequently undertook substantial reconstruction and site modifications.[1] Figure 1 shows the site in early February 2016.

Another reason for visiting the Parchin site, and for that matter also other military sites, is Iran's new commitments under the JCPOA. Iran has agreed not to engage in a series of activities that could contribute to the design and development of a nuclear explosive device. More specifically, Iran committed not to develop and use:

- Computer models to simulate nuclear explosive devices;
- Multi-point explosive detonation systems and explosive diagnostic systems suitable for a nuclear explosive device; and
- Explosively driven neutron sources or specialized materials for explosively driven neutron sources. An experiment in this last category likely occurred at the Parchin site.

However, how is the IAEA going to verify Iran's commitments under the JCPOA? How will the IAEA ensure that such activities are not happening within a conventional military site, such as Parchin? Lack of IAEA access to Parchin and other military sites will negatively impact the verifiability of the JCPOA.

Figure 1. Airbus imagery dated February 4, 2016 showing a site at the Parchin Military Complex that has been linked to high explosive work related to the development of nuclear weapons.

[1] For a comprehensive timeline of all the site modifications see David Albright and Serena Kelleher-Vergantini, "Parchin in the IAEA's Final Assessment on the Possible Military Dimensions to Iran's Nuclear Program," ISIS Report, December 3, 2015, http://isis-online.org/uploads/isis-reports/documents/Parchin_Final_Assessment_on_PMD_Issues_3Dec2015-Final.pdf.