

IAEA Iran Safeguards Report: Iran Degrading Safeguards Effectiveness; Low Enriched Uranium Production Holds Steady

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The International Atomic Energy Agency (IAEA) released on September 6, 2010 its [latest report on the implementation of NPT safeguards in Iran](#) and the status of Iran's compliance with Security Council Resolutions 1737, 1747 and 1803. The following analysis highlights the IAEA's key findings, including 1) production of low-enriched uranium (LEU) at the Natanz fuel enrichment plant (FEP) holds steady and production of nearly 20 percent LEU at the pilot fuel enrichment plant (PFEP) is steady but somewhat less than Iran declared publicly; 2) continued research and development of advanced centrifuges; 3) no progress toward resolving outstanding questions regarding the "military applications" of Iran's nuclear activities; 4) the IAEA has objected to Iran stating that it would no longer allow two additional inspectors to conduct inspections in Iran; and 5) Iran is digging in its heels on complying with traditional safeguards at the Fordow plant, the Natanz facility, and a newly announced centrifuge plant.

A recurring issue throughout the report, as in the last report, concerns Iran's minimalist application of safeguards, in particular where the IAEA seeks information about new enrichment facilities that are reportedly under construction, design information for the Fordow facility, centrifuge production, and uranium mining and related activities. The IAEA continues to note that Iran's refusal to be bound by its traditional safeguards agreement and subsidiary arrangements does not allow the Agency to build confidence in the peaceful nature of Iran's nuclear activities.

One has to worry that Iran is working to degrade safeguards to such a degree that if it does decide to divert low enriched uranium or other nuclear material to use in making a nuclear weapon, the diversion would remain undetected for a longer period of time, longer than the current detection time for 3.5 percent LEU of no more than two to four weeks. Add to that Iran's determination to build centrifuge plants in secret, denying the IAEA's legitimate request to receive early design information about such plants. The result is that Iran may seek to increase its capability to divert nuclear material in secret and produce weapon-grade uranium in a plant unknown to the inspectors or western intelligence agencies.

In a vastly understated conclusion, the report “requests Iran to take steps toward full implementation of its Safeguards Agreement and its other obligations, including implementation of its Additional Protocol.”

LEU production and centrifuge levels at Natanz Fuel Enrichment Plant

Iran’s total LEU production at the Natanz fuel enrichment plant (FEP) to date is reported to be 2,803 kg of low enriched uranium hexafluoride, including 376 kg estimated by Iran to have been produced from May 2, 2010 to August 6, 2010. The FEP is Iran’s primary enrichment facility, where the majority of its IR-1 centrifuges are installed. Activity at the pilot fuel enrichment plant where Iran has begun to enrich uranium up to the 20 percent level, is discussed below.

The average monthly production of LEU at the FEP has decreased slightly to 116 kg per month of LEU hexafluoride (for the last reporting period we noted it was 120 kg of LEU and the one prior to that it was 117 kg of LEU).¹ Iran has introduced a total of 30,780 kg of natural uranium hexafluoride (UF₆) in the centrifuges at the FEP; the average amount this reporting period is 1,292 kg per month. As of August 28, Iran was enriching in 3,772 centrifuges at the FEP, down from 3,936 at the end of the last reporting period. Some 5,084 centrifuges are installed but not being fed with uranium hexafluoride, according to this report. The total number in the FEP is 8,856 IR-1 centrifuges. Figures 1-4 display these trends at Natanz.

Activity at the Pilot Fuel Enrichment Plant

Iran has designated two cascades at the smaller, above-ground pilot fuel enrichment plant (PFEP) for the production of LEU enriched to nearly 20 percent uranium 235 for the Tehran Research Reactor. One of these cascades enriches from 3.5 percent LEU to almost 20 percent LEU, while the second one takes the tails from the first one and outputs about 10 percent LEU and a tails of natural uranium. The ten percent material is fed into the first cascade in addition to 3.5 percent LEU. This process allows Iran to more efficiently use its 3.5 percent LEU stock. Between February 9 and August 20, 2010, 310 kg of 3.5 percent low enriched uranium in the form of uranium hexafluoride was introduced into the single cascade, and Iran withdrew a total of 22 kg of nearly 20 percent LEU hexafluoride and stored it in a small cylinder. The average rate is 3.44 kg of nearly 20 percent LEU hexfluoride per month, [less than Iran declared publicly](#). When Ali Akbar Salehi, the head of the Atomic Energy Organization of Iran (AEOI), previously announced that Iran had produced 25 kg of 19.75% enriched uranium, he could have rounded up to 25 kg, which represents the size of the cylinder loaded with the material.

Continued R&D of advanced centrifuges, but no indication of timing of deployment

¹ The daily rate is 3.89 kg LEU hexafluoride, and the monthly rate is the daily rate multiplied by 30 days.

Iran continues to develop its advanced centrifuges, including testing the IR-4 and the IR-2m at the PFEP. Its progress on developing advanced centrifuges is impossible to measure. In particular, it is not possible to estimate when it may deploy the more advanced machines at the FEP, Fordow, or a new centrifuge plant. The IAEA continues to request access and information related to other sites involved in centrifuge research, development, and manufacturing, but Iran refuses to grant the inspectors' requests.

Iran objects to the designation of two inspectors; IAEA says without any legal basis

Iran objected to the designation of two inspectors who had recently conducted inspections in Iran. Although the traditional safeguards agreement gives Iran a veto over inspectors, the Agency rejected the basis upon which Iran refuses to permit these two inspectors to go to Iran. Since 2006, Iran has refused to designate many IAEA inspectors. Several of them had extensive experience in the fuel cycle and Iranian facilities, undermining the ability of the IAEA to conduct effective inspections.

No progress on IAEA requests for Fordow design information

IAEA monthly inspections confirm that construction on the facility continues; however, Iran has still not installed centrifuges at the site. The reasons could include that Iran is short of IR-1 centrifuges, is awaiting the construction of advanced centrifuges, or has largely abandoned its plans to install centrifuges at this site following its discovery.

According to this report, Iran continues to resist IAEA efforts to provide design information on the Fordow facility. In a June 4, 2010 letter, Iran informed the IAEA that it had no legal basis to request information on the chronology and purpose of the Fordow plant. It reiterated in this letter that the Agency is "not mandated to raise any question beyond the Safeguards Agreement." The IAEA considers that the questions about the start of construction and the site's purpose fall within the Safeguards Agreement, namely to verify that Iran's declaration about the facility are both correct and complete.

New Enrichment Plant

On August 16, 2010, AEOI head Salehi, announced that "studies for the location of 10 other uranium enrichment facilities" had ended, and that "the construction of one of these facilities will begin by the end of the (current Iranian) year (March 2011) or start of the next year."² The IAEA requested that Iran provide preliminary design information for the facility, but Iran did not, stating only that it would provide the Agency with the required information "in due time." Iran has also said that the statements on early

² "[Iran Specifies Location for 10 New Enrichment Sites](#)," Fars News Agency, 16 August 2010.

notification of design information have “no legal base.” The IAEA states that Iran is required to provide this information.

No progress on weaponization issues

No progress has been made on resolving what the IAEA terms “possible military dimensions” to Iran’s nuclear program. Iran continues to refuse IAEA requests to discuss such issues and insists that the documentation on which such allegations are based are forgeries. The Agency again reported that it “remains concerned about the possible existence in Iran of past or current undisclosed nuclear related activities, involving military related organizations, including activities related to the development of a nuclear payload for a missile. There are indications that certain of these activities may have continued beyond 2004.” The IAEA stressed that the “passage of time and the possible deterioration in the availability of some relevant information increase the urgency of the matter.”

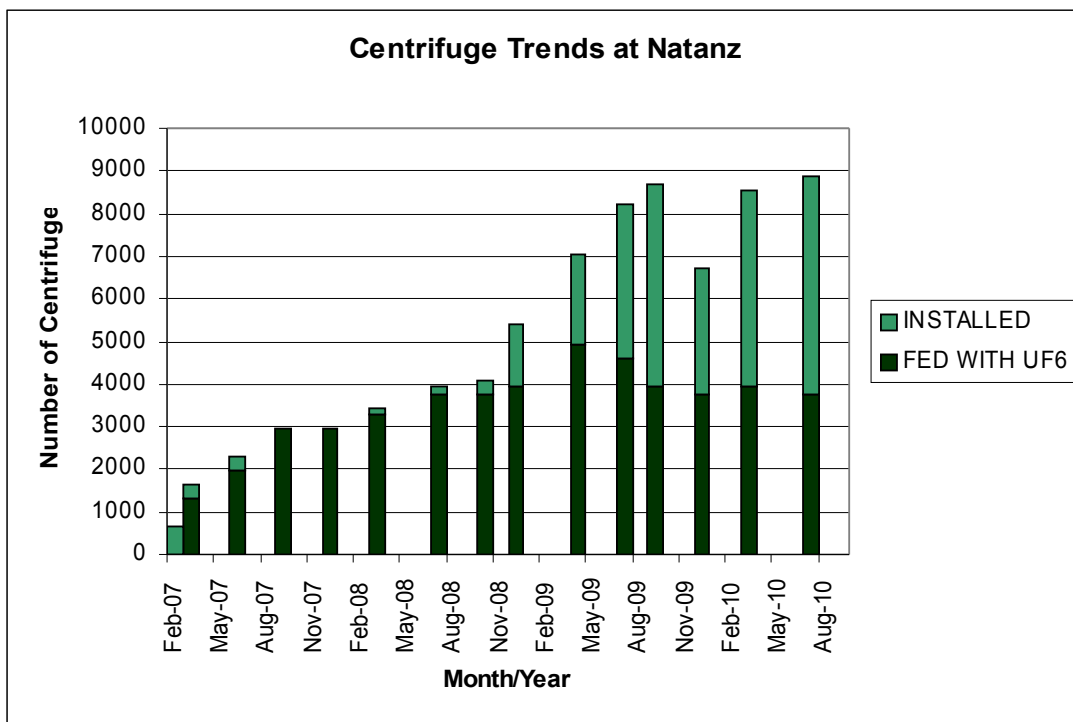


Figure 1: Centrifuge Trends at Natanz Fuel Enrichment Plant

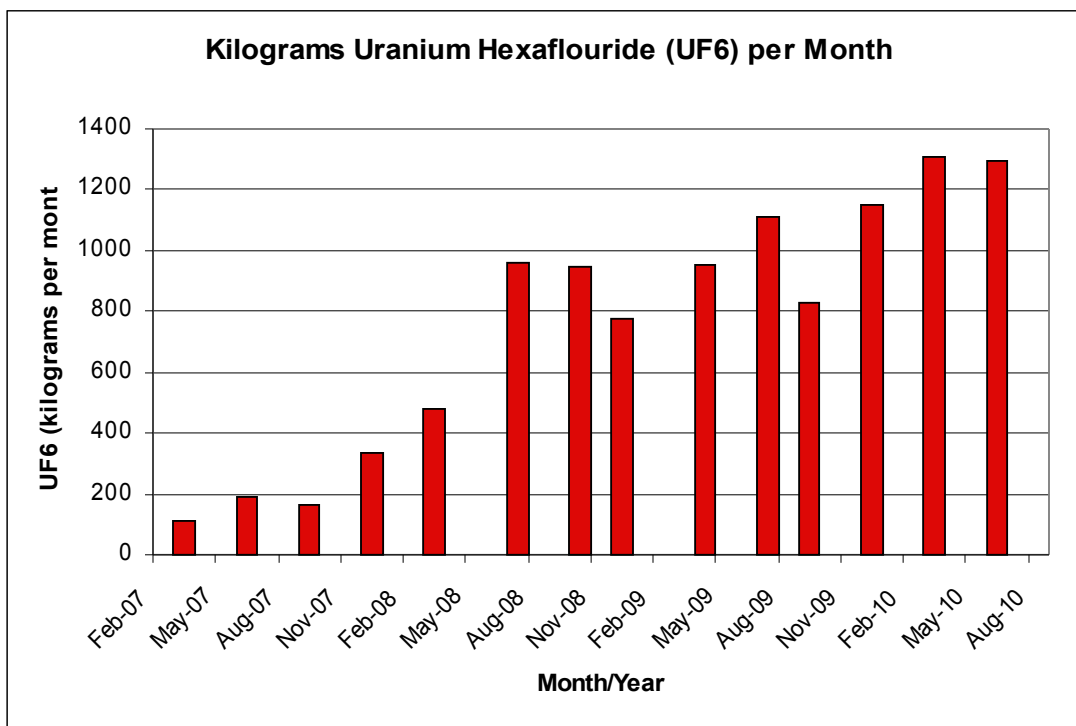


Figure 2: Uranium Hexafluoride Feed Trends at Natanz

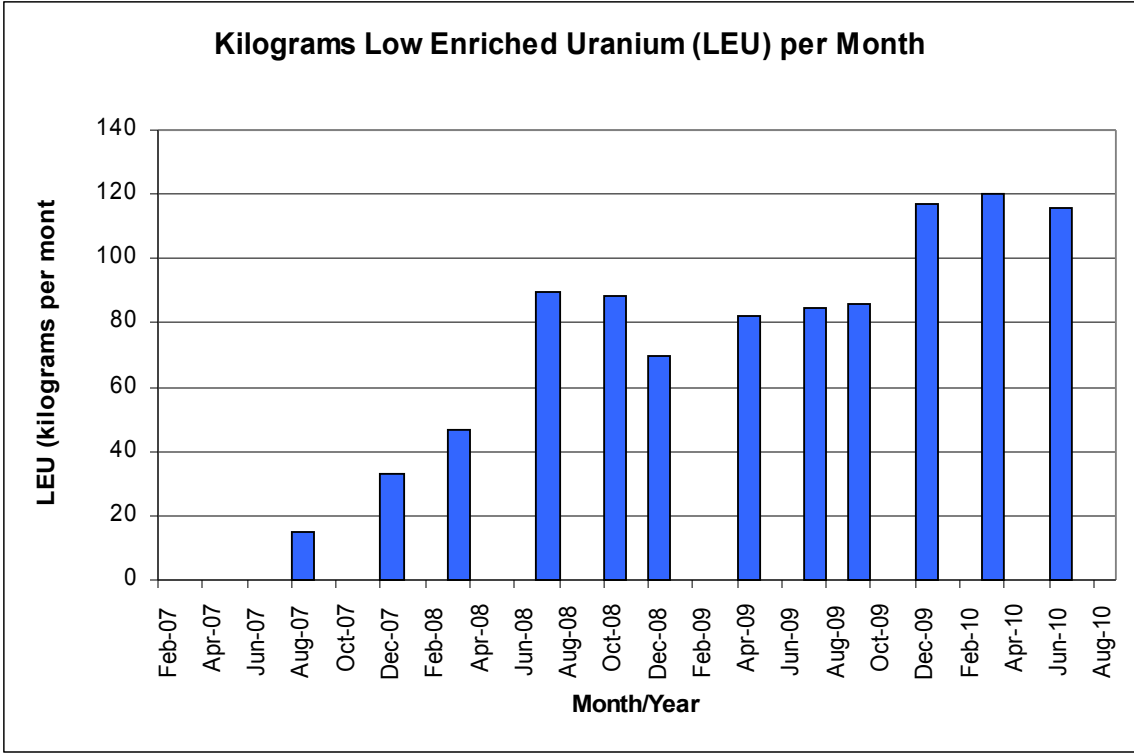


Figure 3: LEU Production Trends at Natanz

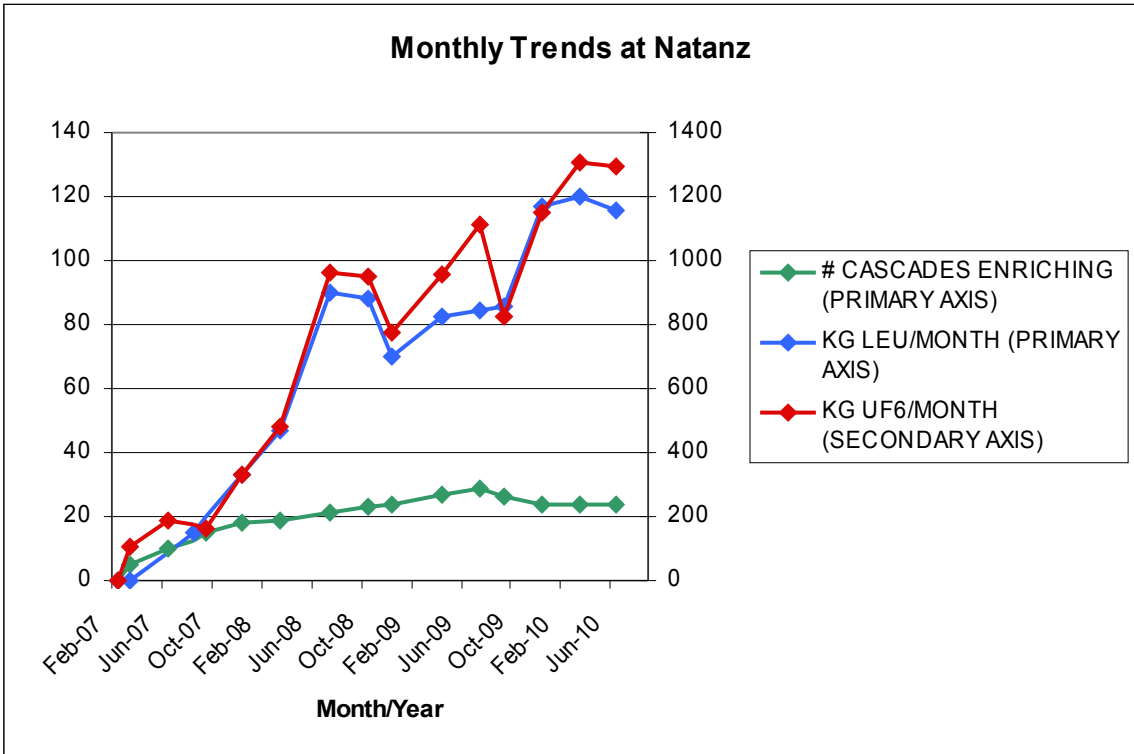


Figure 4: Monthly Trends at Natanz