

# **IAEA Safeguards Report on Iran: Limited Progress in enrichment; controversial strategy on outstanding issues; continued defiance of UN Security Council**

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The IAEA distributed to members of its governing board this morning its latest report on the status of safeguards implementation in Iran. Following is a summary and analysis of the sections regarding uranium enrichment at Natanz. In brief, our assessment is that the Fuel Enrichment Plant (FEP) is not producing enriched uranium at a level expected just a few months ago, although the number of centrifuges enriching uranium has grown. It is not possible to determine whether the low output is the result of technical difficulties or political considerations, though our judgment is that both issues play a part in the current state of Iran's enrichment efforts.

## **How many centrifuges are operating at the FEP?**

As of August 19, 2007, just under 2000 centrifuges in 12 cascades were enriching uranium at the Natanz FEP. Another cascade was operating without uranium hexafluoride, one cascade was being vacuum tested, and two others were under construction. The status of the last two cascades in the module of 18 cascades was not discussed. Despite many pronouncements by senior Iranian officials implying the contrary, Iran has still not finished its installation of its first block or module of 18 cascades containing almost 3000 centrifuges.

## **How much uranium has been enriched at the FEP?**

Since February 2007, Iran has fed some 690 kg of natural uranium hexafluoride (UF<sub>6</sub>) into the cascades at the FEP, which the report states is "well below the expected quantity for a facility of this design." Without information about when precisely the uranium hexafluoride was introduced into each cascade, it is difficult to determine how well or efficiently the centrifuges are operating. At Iran's stated rates of feeding UF<sub>6</sub>, and if operating on a continuous basis, one would expect a single cascade to consume approximately 50 kg of natural uranium hexafluoride per month. This is far above current rates.

The report does not state how much low-enriched uranium has been produced, only that the IAEA has verified enrichment to levels up to 3.7 percent, though Iran has claimed enrichment to 4.8 percent.

In total since February 2007, we estimate that Iran has produced less than 70 kilograms of low enriched uranium at the FEP.<sup>1</sup> During the most recent reporting period reflected in this report, we estimate that no more than 43 kilograms of low enriched uranium were produced, or about 14 kilograms per month. For comparison, 2,000 centrifuges operating at the level achieved by Pakistan's P-1 centrifuges would have produced about 90 kilograms of low enriched uranium per month.<sup>2</sup> Iran's reduced values for enrichment suggest that it has either encountered technical difficulties in operating its centrifuge cascades or has chosen to operate at this level for some unstated purpose. Iran likely has managed to learn how to operate individual centrifuges and cascades adequately. However, it still may be struggling to operate a large number of cascades at the same time in parallel. In addition, Iran's leadership may have decided to slow work to overcome technical problems in order to forestall negative reactions that would lend support for further sanctions by the UN Security Council, Europe or Japan.

We further note that under the weakened safeguard conditions currently in force, the scope of IAEA inquiries into Iran's enrichment program is limited, precluding the IAEA from obtaining more detailed clarifications on the status of the FEP and its centrifuges.

The IAEA has also not been able to determine whether Iran has undeclared nuclear facilities. Iran may be installing centrifuges at a secret, undeclared plant. Under the current safeguards conditions, Iran could do so without violating any safeguards agreements as long as it did not introduce nuclear material.

## **Cooperation on outstanding issues**

The IAEA states that it has resolved two outstanding issues—that of plutonium separation experiments in which the IAEA had previously found discrepancies in Iran's accounting, and the issue of highly-enriched uranium (HEU) particle contamination found on the spent fuel containers at a waste storage facility. Based on information provided by Iran, both matters are now “considered resolved.”

Several other issues, including Iran's research into both P-1 and P-2 centrifuges and alleged studies into the design of a missile re-entry vehicle, remain unresolved and will hopefully be addressed according to the terms of the agreed workplan, which is appended to the IAEA's report. (See [ISIS Issue Brief](#))

Part of the report's summary appears to be an effort by the IAEA to clarify the terms of the workplan, which has become controversial. The report states for the workplan to succeed Iran should fully cooperate, provide to the IAEA "all relevant information and access to all relevant documentation and individuals," and implement “all the necessary safeguards and transparency measures, including the measures provided for in the Additional Protocol.” These are important clarifications of the workplan, which we hope

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<sup>1</sup> The low enriched uranium is assumed to be about 3.5 percent enriched on average.

<sup>2</sup> This estimate assumes that the centrifuges are operating at an annualized output of 2 separative work units per year, the average enrichment level is 3.5 percent, and the tails assay is 0.4 percent.

will be embraced by Iran, particularly as the discussion moves to the more contentious outstanding issues.

### **Calls on Iran to implement Additional Protocol**

The IAEA notes that while it is able to “verify the non-diversion of declared nuclear material,” it is not able to verify the full “scope and nature” of Iran’s nuclear program, in part because Iran is not observing the Additional Protocol. The report states that “Confidence in the exclusively peaceful nature of Iran’s nuclear programme requires that the Agency be able to provide assurances not only regarding declared nuclear material, but, equally important, regarding the absence of undeclared nuclear material and activities in Iran, through the implementation of the Additional Protocol.”

The report closes with a call by the IAEA Director General on Iran to ratify and bring into force the Additional Protocol, and notes that contrary to the decisions of the UN Security Council, Iran has neither suspended enrichment activity at the FEP or construction of the heavy water reactor at Arak.