Institute for Science and International Security

ISIS REPORT

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IAEA Report on Iran

Centrifuges increase; Rate of LEU production steady; progress on inspection requests at Arak and Natanz; no progress on possible military dimensions

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The International Atomic Energy Agency (IAEA) released August 28, 2009 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.

Number of Centrifuges

The report notes that as of August 12, 2009 the number of centrifuges enriching uranium at the Natanz Fuel Enrichment Plant (FEP) has declined slightly to 4,592 IR-1 centrifuges (down from 4920 in early June 2009) with an additional 3,716 centrifuges installed but not enriching uranium. **This brings the total number of centrifuges either enriching uranium, under vacuum, or installed to 8,308 centrifuges.** Installation of other IR-1 centrifuges continues. It should be noted that continuing to install large numbers of new centrifuges is significant as the act of introducing uranium hexafluoride into the centrifuges is a relatively minor step.

LEU Production Rate Holding Steady

During the current reporting period, from June 1, 2009 to July 31, 2009, Iran produced 169 kg of LEU hexafluoride, corresponding to approximately 2.77 kg per day. This is virtually the same as the daily LEU production rate during the previous reporting period, from February 1 through May 31, 2009, namely 2.75 kg per day.

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Development of Advanced Centrifuges Continue

Iran is now testing a ten-machine cascade of IR-4 centrifuges, which might be a longer version of the IR-2 or IR-3. It also is testing a ten-machine cascade of what it calls IR-2m.

Agrees to IAEA safeguards requests at Natanz

In the last report, the IAEA noted that given increases in the number of centrifuges operating and the rate of production of LEU, improvements to "containment and surveillance measures" at the FEP are necessary. Iran accepted these measures.

Inspectors Visit Arak Reactor

This report notes that Iran allowed the IAEA access to the Arak heavy water reactor after repeated requests from the IAEA. The IAEA was able to carry out a design information verification (DIV) and, as a result, noted that the reactor vessel is not yet present. (Iran stated that the vessel would be installed in 2011.) It also reported that in its current state of construction, the facility conforms to the older January 24, 2007 Design Information Questionaire (DIQ) submitted by Iran. However, questions have arisen over parts of the reactor and its fueling. Despite repeated requests from the IAEA, Iran has not submitted an updated and more detailed DIQ. In the August 28 report, the IAEA has asked that the DIQ focus in particular on the "nuclear fuel characteristics, fuel handling and transfer equipment and the nuclear material accountancy and control system."

Military Dimensions

The IAEA reports no substantive progress in resolving issues about possible "military dimensions" to Iran's nuclear program. Its report does appear to rebut Iran's continued charges that the documentation that forms the basis of the alleged studies is forged. The report states that "the information contained in that documentation appears to have been derived from multiple sources over different periods of time, appears to be generally consistent, and is sufficiently comprehensive and detailed that it needs to be addressed by Iran with a view to removing the doubts which naturally arise, in light of all of the outstanding issues, about the exclusively peaceful nature of Iran's nuclear programme." At the same time, the IAEA also chastises member states for placing undue constraints on the IAEA's use of the information and "making it more difficult for the Agency to conduct detailed discussions with Iran."

Nuclear Weapon Breakout Calculations

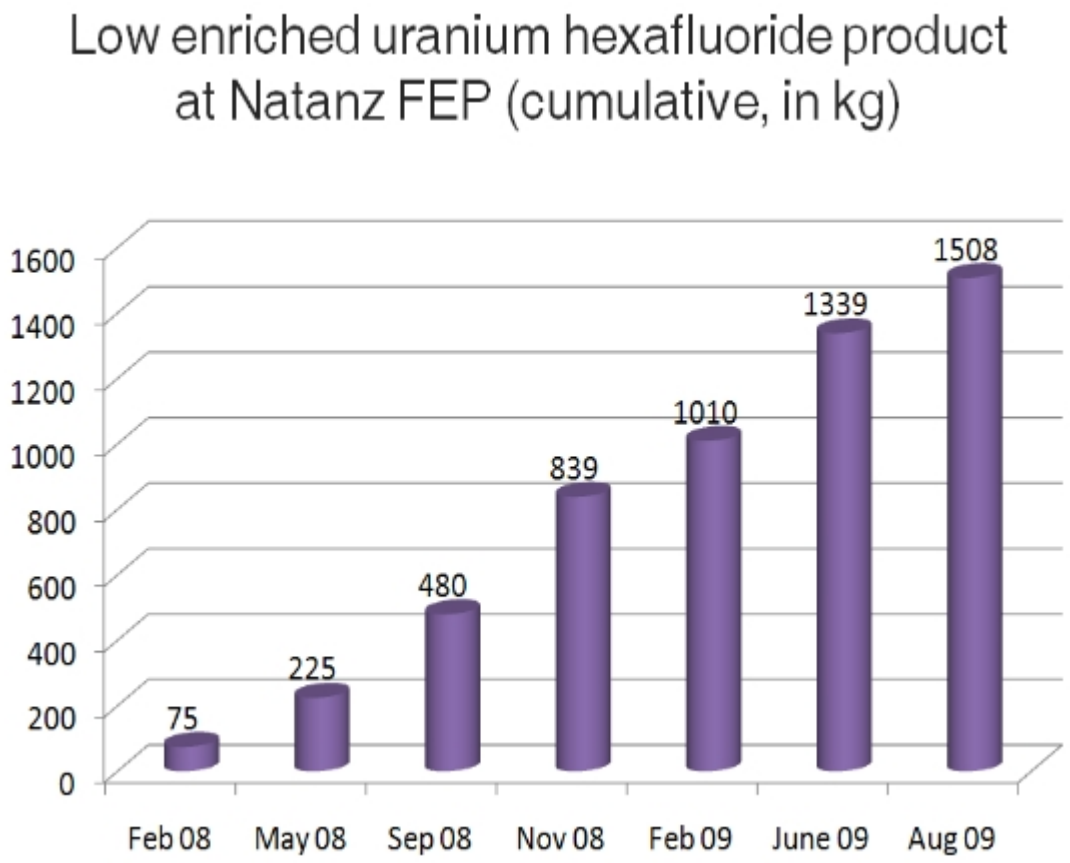
As ISIS has noted in previous reports, nuclear weapons "breakout capability" is a scenario that involves enriching LEU up to weapon-grade uranium. This could be accomplished within 3-6 months at either the Natanz facility or in a clandestine gas centrifuge facility. It provides a measure of Iran's growing nuclear weapons capabilities. Whether Iran intends to pursue this approach is unknown.

Last February, Iran accumulated enough LEU to be able to enrich enough weapon-grade uranium for one nuclear weapon.

At Iran's current rate of 2.77 kilograms of LEU hexafluoride per day, Iran would accumulate in total enough LEU to use as feed for the production of sufficient weapon-grade uranium for two nuclear weapons by the end of February 2010.

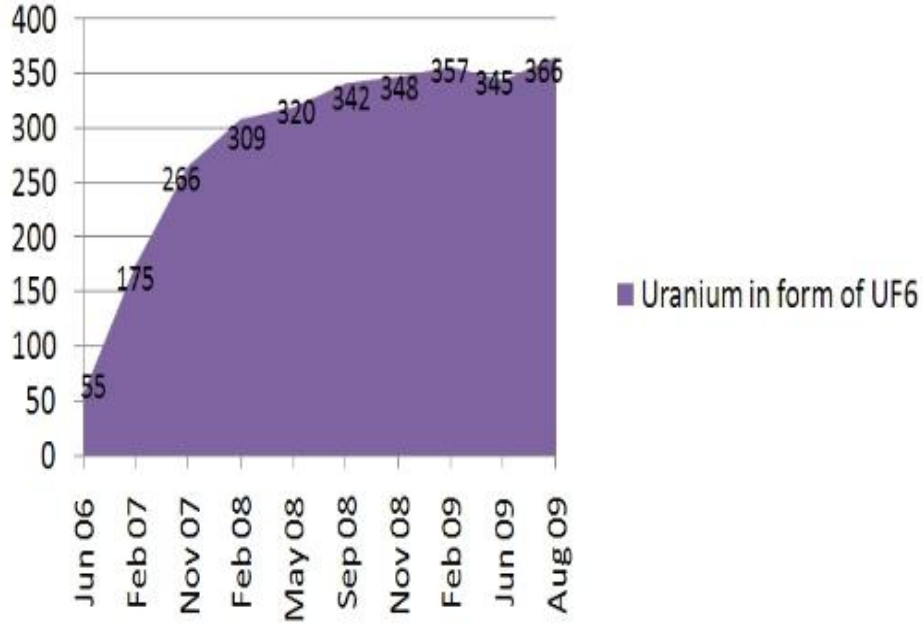
No Progress on Darkhovin and Revised Code 3.1

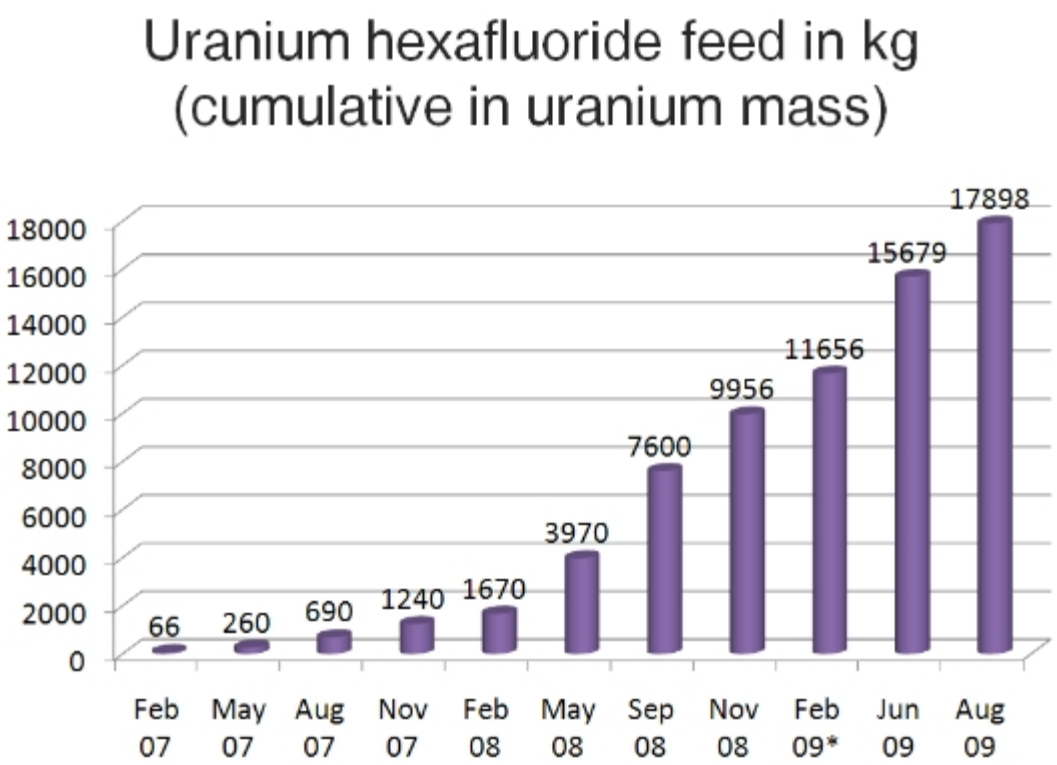
As noted above, the IAEA has reported that Iran refuses to provide the Agency with design information for a planned reactor at Darkhovin. The IAEA also highlighted Iran's continued refusal to implement the updated version of Code 3.1 of its safeguards agreement, noting that Iran is the only "state with significant nuclear activities which has a comprehensive safeguards agreement in force but is not implementing the provisions of the revised Code 3.1."



Cumulative stocks of UF6 at Esfahan

(in metric tonnes of uranium)





* UF6 Feed for this reporting period estimated based on product of 171 kg of LEU