UNITED AGAINST NUCLEAR IRAN

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Technical Talking Points

Number of Centrifuges
Iran is in possession of 8,308 centrifuges as of August 12, 2009 for the purpose of enriching uranium.[1] As of June 2009, Iran added an average of approximately 115 centrifuges per month at its Natanz Fuel Enrichment Plant since January 2006.[2]

How much enriched uranium can Iran produce per year?
Based on recent production capabilities Iran can produce approximately 1,000 kg of low-enriched uranium per year.[3] This is enough to produce 2 bombs per year when enriched to weapons grade levels.

Amount of enriched uranium currently in possession
Iran currently has 31.7 kg of uranium-235 (U-235) being produced at an average of 2 kg per month. 21.6 kg is required to fuel a "first-generation implosion bomb." Based on its monthly production rate, experts believe that Iran may have enough U-235 to fuel a second bomb by October 2009. Iran also has 1,339 kg of uranium hexafluoride (UF_6) enriched to 3.5 percent uranium-235 (U-235).[4] Iran's facilities can potentially convert low-enriched uranium to weapons grade within three to six months.[5]

What are Iran's main nuclear facilities?
Bushehr: The power plant at Bushehr was originally built with the help of Germany's Kraftwerk Union (a subsidiary of Siemens AG) in the 1970s. Work resumed in the late 1990s under Russia's Atomstroyexport. The US opposed the construction of Bushehr in 1998 for the following reasons: "First was that weapons grade plutonium could be extracted from the reactor allowing the Iranians to construct nuclear weapons. Secondly, the US was concerned that the knowledge gained by Iranian scientists working at Bushehr could further Iran's nuclear weapons program."[6]

Arak: The heavy water production facility at Arak was revealed to the public in 2002 by the National Council of Resistance in Iran. As of fall 2008, satellite imagery showed that significant progress had been made on the construction of the facility. The reactor at Arak is called the IR-40. Construction may be

[1] IAEA Director General, "Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions 1737 (2006), 1747 (2007), 1803 (2008) and 1835 (2008) in the Islamic Republic of Iran." *International Atomic Energy Agency*. 28 August 2009. http://www.isis-online.org/publications/iran/IAEA_Iran_Report_28August2009.pdf
[2] David Albright and Jacqueline Shire, "IAEA report on Iran – Centrifuge and LEU increases; access to Arak reactor denied; no progress on outstanding issues." *Institute for Science and International Security*. 5 June 2009. http://isis-online.org/publications/iran/Iran_IAEA_Report_Analysis_5June2009.pdf
[3] Iran Watch, "Iran's Nuclear Timetable." (in particular, footnotes C, J, and K) http://www.iranwatch.org/ourpubs/articles/iranucleartimetable.html#b
[4] IAEA Director General, "Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions 1737 (2006), 1747 (2007), 1803 (2008) and 1835 (2008) in the Islamic Republic of Iran." *International Atomic Energy Agency*. 5 June 2009. http://www.iaea.org/Publications/Documents/Board/2009/gov2009-35.pdf
[5] David Albright, Paul Brannan, and Jacqueline Shire, "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." *Institute for Science and International Security*. 28 August 2009. http://www.isis-online.org/publications/iran/Analysis_IAEA_Report.pdf
[6] GlobalSecurity.org, "Bushehr." http://www.globalsecurity.org/wmd/world/iran/bushehr.htm

completed by 2011, with the facility being fully operational in 2013. Arak would produce approximately 9 kg of plutonium a year (enough for two nuclear bombs annually). [7] Heavy-water reactors use natural uranium as fuel in order to produce plutonium. Iran can therefore acquire natural uranium for non-weapons purposes (research, power production, etc) and use it to produce weapons-grade ("fissile" or "fissionable") material. Even if the United Nations and International Atomic Energy Agency provided Iran with uranium for civil purposes under the provisions of the Non-Proliferation Treaty (NPT), Iran would be able to use the low-enriched uranium to create fissile plutonium for a nuclear weapon. Only several kg of weapons-grade plutonium is necessary for an implosion bomb, making plutonium extremely dangerous in the hands of rogue nations and terrorists.

Natanz: The enrichment facility at Natanz was revealed to the public in 2002 by the National Council of Resistance in Iran. Natanz enables Iran to produce large amounts of low-enriched uranium that can be enriched to weapons-grade within a short period of time.

Esfahan: Esfahan is believed to be the center of Iran's nuclear weapons program and the country's largest nuclear research center. It is believed to have housed missile and chemical weapons programs throughout the 1980s and 1990s, receiving assistance from North Korea and China. Esfahan has a uranium conversion facility (it received technology from China in the 1990s)—for conversion to gas prior to enrichment--and a Fuel Fabrication Laboratory (to produce fuel for a nuclear reactor), among others.[8]

What kind of missiles does Iran possess?
Iran's missile program mainly consists of the Shahab-1, Shahab-2, Shahab-3, and Ghadr-1 Kavoshgar (Shahab-3M) missiles. The Shahab variants are believed to have some of the same parts as North Korean SCUD missiles—missile-collusion between the two countries is highly apparent.[9] Plans for several other Shahab variants are rumored to be in existence. Reports suggest that Iran may also have short-range ballistic missiles like the Fateh A-110 and the Chinese-imported CSS-8 (Tondar-69).

How many missiles does Iran have?
Iran is believed to posses 50-300 Shahab-1 missiles, 50-150 Shahab-2 missiles, and 25-100 Shahab-3 missiles.[10] Its official inventory is unknown.

What are the ranges of these missiles?
The Shahab-1, Shahab-2, and Shahab-3 missiles have ranges of 300 km, 500 km, and 1,300 km respectively. [11] The other Shahab variants may have ranges of 1,500-2,500 km, allowing for targets in the

[7] David Albright and Paul Brannan, "Arak Heavy Water Reactor Construction Progressing." *Institute for Science and International Security*. 13 November 2008. http://www.isisnucleariran.org/assets/pdf/Arak_13November2008.pdf
[8] GlobalSecurity.org, "Esfahan Nuclear Technology Center." http://www.globalsecurity.org/wmd/world/iran/esfahan.htm
[9] "Iran's Nuclear and Missile Potential: A Joint Threat Assessment by US and Russian Technical Experts." *East West Institute*. May 2009. http://docs.ewi.info/JTA.pdf
[10] GlobalSecurity.org, "Iran Missiles." http://www.globalsecurity.org/wmd/world/iran/missile.htm
[11] Ibid.

Middle East, Turkey, and southeastern Europe. The Shahab-3 and its higher-range variants are believed to be adequate delivery methods for nuclear warheads.[12]

[12] Andrew Feickert, "Iran's Ballistic Missile Capabilities." *Congressional Research Service*. August 23, 2004. http://fpc.state.gov/documents/organization/39332.pdf