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The Iranian Decision on the Production of Nuclear Weapons

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The international media abounds with headlines on similar assessments by the Israeli and US intelligence agencies that the Iranian regime has not yet decided to produce nuclear weapons, as well as the apparent disagreements between the US and Israeli administrations on the seriousness of the situation. Any differences of opinion, however, are grounded in the knowledge of basic facts on the status of the Iranian program. What follows is a review of the basic facts, based on the recent IAEA reports – and recognizing that because of the limitations imposed on the IAEA verification mechanism, these facts should be taken as minimal, especially when the existence of undeclared facilities and materials is possible. These basic facts will help clarify the issue.

- Iran is enriching uranium at its Natanz underground site, having already enriched several tons to the value of 3.5 percent. This enrichment can be used as fuel for the Bushehr nuclear power reactor.
- Iran is enriching uranium to the value of a little less than 20 percent, which is still defined as Low Enriched Uranium (LEU). This enrichment can be used as fuel for the Tehran Research Reactor (TRR).
- Iran constructed a well-protected small uranium enrichment facility at Fordow, near the city of Qom, declared to be used for the enrichment to the 20 percent level. Iran is installing the centrifuges at this installation.
- Iran is constructing a heavy water natural uranium 40 megawatt nuclear reactor at Arak (IR-40). This reactor type can be used for the production of plutonium of military-usable grade. It will be some time before this reactor will be put into operation.
- Iran has all the auxiliary facilities for the production of the enriched uranium and the production of nuclear fuel for its reactors.
- Iran may have a Pakistani design of an enriched uranium-based explosive mechanism. There are indications that Iran carried out experiments and activities connected to nuclear explosive mechanism design.

What, then, is Iran's potential for producing nuclear weapons? Iran has the technical know-how and the facilities to enrich its LEU (3.5 and 20 percent uranium) to high enriched uranium (HEU) of about 90 percent enrichment. This process would take longer for the first quantity needed for the core of a nuclear explosive device and less for the ensuing quantities. The published estimates vary from a very short period (of the order of weeks) through several months and up to about a year. Using the available quantities of LEU, Iran could produce HEU sufficient for 4-5 cores of nuclear explosive devices.

In addition, it is generally assumed that Iran has all the necessary components for an implosion nuclear explosive device. At the same time, the status of fitting the nuclear explosive device on to a missile warhead is uncertain. Finally, the Iranian government has not given the go ahead for enriching uranium beyond 20 percent at its declared and inspected facilities.

This last statement is undisputed by both US and Israeli intelligence agencies and the respective governments. What, then, is the source of the apparent disagreement between them? The first disputed issue is technical in nature: can the Iranians produce a workable nuclear explosive device. According to the 2007 National Intelligence Estimate (NIE), Iran stopped work on the development of this system in 2003, and it is uncertain whether it restarted this work. On the other hand, it may have an old Pakistani workable design, and it may have restarted the project after 2007. The *New York Times* reported on March 18, 2012 that some US assessments are that there is a high probability that Iran has not restarted this project.

Herein lies the big difference in the estimates of the situation. While there is little doubt that the Iranians can, if the technicians receive the order to do so, quite quickly produce HEU for the first core of a nuclear explosive device, the US thinks that there would still be enough time to do something about it, since it would discover this in time. The same *NYT* article, however, also outlines US difficulties in gathering intelligence in Iran, so that there are some doubts about the efficacy of timely intelligence gathering and the wisdom of depending on the timely warning that would be given by the intelligence agencies. If the intelligence is encountering so many difficulties, how can one be sure of the intelligence-based estimates?

Indeed, the US tactics regarding the Iranian nuclear project imply a significant gamble: the probability that sanctions will work; the probability that the Iranians have not restarted the explosive mechanism development work; the probability that they do not have a working nuclear explosive mechanism design; the probability that the world will discover in time should Iran decide to breakout and start enriching uranium to military-usable levels. Dependence on the sanctions, the non-availability of a workable explosive

mechanism, and the discovery of the intentions of the Iranian government in time to stop it is probably too much for the government of Israel. Moreover, it is also uncertain what action would be eventually taken by the US if a crisis point is reached.

Therefore, it is not the undisputed fact that the leadership of Iran has not yet given the order to produce HEU at its known facilities that is troublesome. It is the question of what could be done, and whether that would be enough to remove the danger that the present regime in Iran would come out with a nuclear weapon in its hands.

