Iranian Pathway[1] to a Nuclear Weapon Under the Amad Plan–What we learned from the Nuclear Archives

Fissile material[2]

Uranium mining and milling
"Bandar Project"@ Gchine
Full report | Summary

LEU[3] imported, or produced at Natanz or other Iranian sites

Conversion to UF_6, @ "New Tehran Site" (planned) | Full report

Uranium enrichment plant
@ Al Ghadir, aka Fordow
Full report | Summary

Conversion from weapon grade uranium hexafluoride to weapon grade uranium tetrafluoride

Production of weapon grade uranium metal and components of nuclear core
Project 3/14: "Shahid Boroujerdi" @ Parchin
Full report | Summary
and Shahid Mahallati Metals Workshop
@ Shahid Hemmat Industrial Group

In the early 2000s, Iran's was building a substantial nuclear weapons production complex under the "Amad Plan" to manufacture five nuclear weapons and prepare an underground nuclear test site, all to be finished by early 2004 (on five weapons, read the full report or the summary.) Under international pressure, Iran secretly downsized and reoriented this nuclear weapons program into more camouflaged parts, some or all of which may continue today in reduced form (on reorientation, read the full report or summary.)

Non-fissile material weapons components (see @Project 110, click here)

High explosives manufacturing[4]

Nuclear weapon design
("Simulation Project")

Mechanical, electrical, and electronics parts fabrication[5]

Shock wave generator
@ Sanjarian
Full report

Major high explosives testing
Testing @ Parchin
Full report
Other testing @ Marivan, Sanjarian, Golab Dareh | Full report
Hydrodynamic testing with pin dome
Click here.

Neutron source
Sub-projects 3/20[6] and 3/21
Full report

Other components
Flyer plate (click here for more), main charge, outer casing, etc.

Underground nuclear test site
"Midan Project"
Full report | Summary

Warhead assembly plant
Click here for the weapon design

Re-entry vehicle
@ Shahid Hemmat Industrial Group
Click here for schematics

Shahab-3 missile Integration

Notes and Comments

[1] This chart generally flows from the top to the bottom, ending with a nuclear warhead on a Shahab-3 missile. Some activities occur simultaneously and are therefore presented on the same level.

[2] This pathway does not include all of the design, testing, and development facilities involved in the steps of converting and enriching uranium, or making nuclear weapon components from natural and enriched uranium, in particular those facilities for making uranium tetrafluoride or converting enriched uranium hexafluoride to uranium tetrafluoride.

[3] Low-enriched uranium

[4] It is not clear if this was part of the weapons program or part of a conventional military industry, where high explosive components were built under contract according to designs provided by the nuclear weapons program.

[5] It is currently unknown where these parts were made.

[6] The location of the site which manufactured uranium deuteride (project 3/20) is not currently known.