

Fault Tree Analysis Report

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Model Overview

Metric	Value
Total Nodes	38
Total Edges	37
Root Events	15
Conditional Events	14
Gates	9

Target Event Result

Target Event	Nuclear Weapons Assembly
Probability	0.855950
Percentage	85.5950%

Summary Statistics

Category	Count	Average	Min	Max
Root Events	15	0.7700	0.0000	1.0000
Conditional Events	14	0.7247	0.0100	1.0000

Root Events (Independent Base Events)

Probability	Event Name
1.0000	HEU is recovered from rubble
0.1000	HEU has been moved to a safe location before the war (excluding Esfahan tunnel)
0.7500	Iran can build more centrifuges for small plant (defined as up to 5000 SWU/ 1000 centrifuges) or as few as 500 centrifuges
0.6000	Iran has stockpiles of centrifuges intact for small plant, such as inside Esfahan tunnel complex or at an undeclared
0.1000	Iran can build more centrifuges for big plant
0.0000	Iran has stockpiles of centrifuge intact for big plant
1.0000	Natural Uranium is available
1.0000	Enrichment related equipments are available
1.0000	Aluminum shell with channels
1.0000	High purity PETN
1.0000	Main charge
1.0000	Build a neutron initiator or have one
1.0000	Other components such as EBW, Capacitors, Switches, flyer plate etc.
1.0000	Assemble the Surrogate Core
1.0000	Iran can conduct a successful cold test

Conditional Events (Dependent on Parent Events/Gates)

Probability	Event Name
1.0000	HEU UF6 is usable and not spiked, and sufficient to account for processing losses and accidents
0.9000	Centrifuges are available for a small plant
1.0000	HEU is moved to a secret location
0.1000	Centrifuges are available for a big plant
0.1000	Converting natural uranium oxide to natural UF6
0.0100	The actual enrichment of natural uranium to WGU in a large enrichment plant within several months
0.9000	The actual enrichment of HEU to WGU in a small enrichment plant in less than six months
0.8559	WGU UF6 to UF4
0.8559	WGUF4 to WG uranium metal
0.8559	Melting and pouring into a mold
0.8559	Molding, Finishing and machining the metal core
0.8559	Coating the metal core
1.0000	Shockwave detonator (MPI)
0.8559	Nuclear Weapons Assembly *** TARGET ***