



## Israel's Nuclear Inventory

Israel's assumed nuclear weapons program, and the history surrounding it, is characterized by ambiguity. Thus far, that ambiguity has been effectively tolerated. Any formal recognition or acknowledgement of Israel's weapons program could upset the current uneasy balance in the region, potentially spurring nuclear proliferation across the Middle East.

Israel's policy of nuclear opacity makes analysis challenging, but historical records provide key insights. In a July 1969 [declassified memo](#) to President Richard Nixon, Secretary of State Henry Kissinger made clear that when buying the United States' Phantom aircraft, Israel committed "not to be the first to [introduce](#) nuclear weapons into the Near East." However, it is now thought that Israel interpreted "[introduce](#)" to mean that "they [Israel] could possess nuclear weapons as long as they did not test, deploy, or make them public." The "introduction" argument remains a staple of Israeli policy. When asked to confirm that Israel does not have any nuclear weapons in a 2011 interview with CNN, Prime Minister Bibi Netanyahu [responded](#), "That's our policy. Not to be the first to introduce nuclear weapons into the Middle East." The [National Security Archive](#) is a valuable resource for declassified primary source documentation of Israel's nuclear weapons program.

Many experts think that Israel's policy of opacity could and likely would change if another country in the Middle East acquires nuclear weapons. To prevent both outcomes, Israel has consistently intervened in its neighboring countries' nuclear programs through what it calls its preventative strike policy, aka [the Begin Doctrine](#). For instance, on June 7, 1981, Israel struck and destroyed Iraq's reactor at [Osirac](#) believing it was constructed for weapons purposes. In 2018, Israel [admitted](#) that its fighter jets bombed al-Kibar nuclear facility in Deir al-Zour, Syria on Sept. 6, 2007. An extension of this policy may be the [Stuxnet and Flame](#) viruses that targeted Iran's enrichment facility at Natanz in 2010 — believed to be [jointly developed](#) with the United States — as well as the [assassination](#) of Iranian nuclear scientists.

### How Many?

Israel is widely believed to possess [90](#) plutonium-based nuclear warheads and to have produced enough plutonium for [100-200 weapons](#). While a stockpile of this size constitutes a credible minimal deterrent, the lack of an explosive testing program might create concerns about effectiveness. There is speculation that Israel worked with other countries to test its weapons' effectiveness. Israel may have [relied on France](#) for some testing data until France imposed an [embargo](#) on Israel after the Six-Day War in June, 1967. Some also speculate that Israel conducted a nuclear weapons test with [South Africa in 1979](#) known as the Vela incident.

Weapons-grade fissile material stocks in the country are thought to have come from two sources.

First, it is widely believed that the plutonium for Israel's nuclear weapons program was produced at the Negev Nuclear Research Center near the city of Dimona. Natural uranium fuel may have been irradiated in a [heavy-water-moderated reactor](#). Then, the plutonium could be chemically separated in a reprocessing plant that is believed to be co-located at Negev. It is believed that the Dimona was built with [French assistance](#) in the 1960s, although the facility is not under IAEA safeguards and inspectors are not allowed to go there. An [unclassified study](#) prepared for the U.S. Congress in 1980 estimated that the Dimona reactor was capable of producing 9-10 kilograms of fissile plutonium a year starting in 1965.

Second, there is unconfirmed reporting over the diversion to Israel of [300 kilograms](#) of weapons-grade uranium from a U.S. naval propulsion reactor fuel fabrication plant in the late 1960s. If true, this material could be stockpiled for weapons use, or it could be mixed with natural uranium and used in the Dimona reactor to [produce tritium](#). Tritium mixed with [deuterium](#), an easily-acquired isotope, can boost the yield of a nuclear explosion.

While a small research reactor located at [Soreq Nuclear Research Center](#) in central Israel is fueled by highly enriched uranium (HEU), the reactor and the fuel are under facility-specific [IAEA safeguards](#). The United States provided Israel the reactor and fuel in the late [1950s](#), but Israel is unable to import more HEU to fuel the reactor, since it is not a member of the Nuclear Non-Proliferation Treaty.

## Air

Israel maintains the U.S.-produced F-15, F-16 and F-35 aircraft, which are all capable of carrying nuclear gravity bombs with modification. The F-15 has a range of [3,500 kilometers](#), but it is unknown if it has been modified to serve a nuclear role. The F-16 has a shorter-range of [1,600 kilometers](#) and is the most likely aircraft to serve a nuclear role since it does so for the U.S. nuclear force and some other NATO members. However, Israel is in the process of replacing the F-16 with the F-35, which the United States has also given a nuclear mission. Israel is scheduled to receive the rest of the 50 stealth aircraft under order by [2024](#) and is considering purchasing [25 more](#) F-35s from the United States.

## Sea

Some experts posit that Israel's [six](#) Dolphin-class submarines could be fitted with a modified cruise missile for land attack, but there is no solid evidence of such deployments. Even if these submarines were nuclear-capable or could be retrofitted for a nuclear purpose, that would not confirm that Israel would or could keep one nuclear submarine continuously deployed at-sea. The lack of a secure second-strike capability would support the argument that Israel relies on a credible minimum deterrent.

## Land

Israel possesses the Jericho II with a range of [1,500-plus kilometers](#) and the Jericho III, which may have a range of [4,000 kilometers](#). The Jericho program finds its roots in an early [1960s agreement](#) with French company [Dassault](#) to produce a surface-to-surface ballistic missile. Production was transferred to Israel after the Six-Day War in June 1967, because France imposed an embargo on new military equipment. The Jericho II was developed with [South Africa](#) and replaced the Jericho I in the early 1990s. There is considerable uncertainty around how many Jericho missiles Israel has in total and how many are nuclear capable. It is assumed that some of these missiles are nuclear-capable with estimates ranging from the likely [24](#) to the sensationalist figures of [50-100](#).