

LEARN ABOUT NUCLEAR WEAPONS

France

The French nuclear arsenal is estimated at 348 nuclear warheads. The Federation of American Scientists notes that France, like other nuclear weapon states, probably has inactive nuclear warheads in a reserve.¹ The French arsenal consists of two nuclear weapon systems: submarine-launched ballistic missiles (SLBM) and air-launched intermediate-distance missiles.

The largest part of the French nuclear arsenal is submarine based. Three of France's nuclear submarines are equipped with 16 ballistic missiles each, each missile with a capacity to launch six warheads. A total of 288 nuclear warheads is estimated in the French submarine fleet.² A fourth nuclear submarine, "Le Terrible", was inaugurated in March 2008. At the same time, French President Nicolas Sarkozy announced a cut in the French arsenal to fewer than 300 nuclear warheads.

France also has about 60 nuclear warheads for delivery from bombers, and is the only nuclear weapon state to deploy nuclear weapons aboard aircraft carriers.³

Nuclear weapons upgrades

France is planning to develop and deploy new nuclear weapons for use through 2040, and shows no signs of planning to give up its arsenal. In March 2008, President Sarkozy spoke on the importance of a common European defense, and claimed that the French nuclear force, by its mere existence, is an important aspect of European security.⁴ France has a highly advanced program to develop the capability to design and manufacture modified or new nuclear weapons without explosive nuclear testing. Notably, with the Laser Megajoule scheduled to be fully operational in 2011, France and the United States are the only states seeking to induce miniature thermonuclear explosions in contained vessels in giant laser facilities.

The new nuclear submarine "Le Terrible" that was inaugurated in March 2008 is a new generation Triomphant class submarine, expected to be deployed in 2010. The submarine is equipped with a new missile, the M-51. The range of the new missile is classified, but according to the French newspaper Le Monde, it should have a range

of up to 8,000 kilometres, thereby being able to reach targets in Asia.⁵ France is also developing two new types of missiles to be ready for deployment in 2010 and 2015, in replacement of an older missile type.⁶

France is developing a new version of its air-launched cruise missiles with a wider range. The new missiles will be equipped with a new type of nuclear warhead, the Tête Nucléaire Aeroportée. France has also developed a new multifunctional Rafale-type bomber, that can be used to launch both conventional and nuclear weapons.⁷

Nuclear weapons reductions

France undertook major reductions and terminations in 1991-1992 and in 1996-1997.

The 1991 and 1992 measures include:

- Abandonment of the strategic surface-to-surface S45 missile program, which had been intended to replace the S3D missiles on the Plateau d'Albion Tidigarelagt
- Early withdrawal of the Pluton short-range surface-to-surface missiles
- Dismantling of the AN52 nuclear bombs carried by Jaguar and Mirage III aircraft;
- Reduction in the SSBNs in service from 6 to 5, and a longer production timetable for new generation SSBNs
- a cut in the Hadès short-range surface-to-surface missile program by 120 to 130 units;
- the decision to store rather than deploy this weapons system.

The 1996 measures include:

- limiting SSBNs maintained in the operational cycle to 4
- withdrawing the Mirage IV strategic aircraft from nuclear missions
- withdrawing from service the surface-to-surface component on the Plateau d'Albion and the closure of this site
- the final withdrawal of the Hadès weapon system, followed by the dismantling of its missiles.

France is now the only nuclear weapon state to have totally eliminated its formerly deployed surface-to-surface nuclear weapon systems. Since the end of the Cold War, the total number of delivery vehicles has been cut by more than half.

Reducing the nuclear budget:

- the share of the defense budget allocated to nuclear expenditure has been reduced by 58% since 1990; and
- the defense budget share in 2005 is 20.7% of the defense equipment budget.⁸

France is the only nuclear weapon state to have closed down and dismantled its nuclear testing facilities. In 1992, France announced a moratorium on nuclear tests. This was suspended by President Jacques Chirac, in 1995. A final series of eight much-debated tests took place between September 1995 and May 1996. The President announced simultaneously that France would carry out a final campaign of nuclear testing in the Pacific and that it would sign a universal and verifiable Comprehensive Nuclear Test Ban Treaty (CTBT). The last French nuclear test took place on 26 January 1996. In July 1998 all nuclear test facilities were dismantled.⁹

In March 2008 President Nicolas Sarkozy gave a speech in which, among other things, he presented an eight-point action plan for nuclear disarmament. The action plan calls on all other states that have conducted nuclear tests to ratify the CTBT, dismantle all nuclear test sites, support negotiations on a Fissile Material Treaty and pending the entry into force of such a treaty, call a moratorium on fissile material production.¹⁰

Role of nuclear weapons in national security strategy

Nuclear deterrence remains a central component of French national defense, as outlined in the 1994 White Paper on Defense, the Appended report 2003-2008 Military programme¹¹ and the document Arms control, disarmament, and non-proliferation: French policy from 2000.

Speaking at the Ile Longue nuclear submarine base in Brittany on 19 January, 2006, then-President Jacques Chirac said France was willing to use nuclear weapons as "a firm and appropriate response from us" to an attack on France's "vital interests". Chirac explicitly asserted that France has reconfigured its nuclear forces in preparation for a tactical nuclear strike against any country that it concludes has sponsored an act of terrorism against France, or has used weapons of mass destruction against France.¹²

In 2007, French President Nicolas Sarkozy clarified that the French security strategy needs to be revisited to meet a changing international security environment. A commission was appointed to do the review, which is to result in a new White Paper on Defense and National Security in spring 2008.¹³

Fissile material

Military Stocks of Fissile Material

Plutonium: 5 tons

HEU: 29 tons

Declared Excess: 0¹⁴

Unseparated Civil Plutonium: 183 tons

Separated Civil Plutonium: 80.1 tons: (48.1 tons nationally-owned, 32 tons foreign-owned)

Estimated by 2010: 48 tons nationally-owned

Estimated by 2015: 46 tons nationally-owned

Estimated by 2020: 43 tons nationally-owned¹⁵

Civil HEU: 4.0-5.3 tons¹⁶

By significantly increasing the fraction of fresh plutonium put into MOX fuel, France will have a large separated plutonium stock well into the future.¹⁷

France suspended weapons-grade plutonium production in 1992 and HEU production in 1996 – the first State to do so.

1 Federation of American Scientists <http://www.fas.org/programs/ssp/nukes/nukestatus.html>

2 Norris, Robert C and Kristensen, Hans M. *France Nuclear Forces 2005*. Nuclear Notebook, Bulletin of the Atomic Scientist vol 61, Nr. 4 2005, s. 73-75

3 Ibid.

4 Erlanger, Steven. “*Sarkozy defends France’s nuclear arsenal*”. International Herald Tribune, 21 mars, 2008. <http://www.iht.com/articles/2008/03/21/europe/france.php>

5 Ibid.

6 Norris, Robert C and Kristensen, Hans M. *France Nuclear Forces 2005*. Nuclear Notebook, Bulletin of the Atomic Scientist vol 61, Nr. 4 2005, s. 73-75

7 Ibid.

8 Reaching Critical Will <http://www.reachingcriticalwill.org/about/pubs/Inventory07/France.html>

9 Global Security <http://www.globalsecurity.org/wmd/world/france/nuke.htm>

10 Reaching Critical Will <http://www.reachingcriticalwill.org/political/cd/speeches08/1session/Mar27France.pdf>

11 <http://www.info-france-usa.org/atoz/mindefa.pdf>

12 Rahir, Kin. “*France Has Nuclear Retaliation Option*”. Der Spiegel International online, 19 Januari, 2006. <http://www.spiegel.de/international/0,1518,396191,00.html>

13 Brookings Institute http://www.brookings.edu/papers/2008/spring_france_chi_vvis.aspx

14 Institute for Science and International Security

http://www.isis-online.org/global_stocks/military_excess_heu.html

15 Institute for Science and International Security

http://www.isis-online.org/global_stocks/end2003/plutonium_watch2005.pdf

16 Institute for Science and International Security

http://www.isis-online.org/global_stocks/end2003/civil_heu_watch2005.pdf

17 Institute for Science and International Security

http://www.isis-online.org/global_stocks/separated_civil_pu.html