Visit to the Luxeuil airbase
16 April 2015

France and disarmament

France is fully committed to disarmament in accordance with the objectives of the NPT. Our approach is global, gradual and tangible:

- **global and gradual**, because the objective of nuclear disarmament cannot be separated from collective security. We can only progress towards disarmament by taking the strategic context into account and **within the framework of a gradual process** that ensures undiminished security for all and rules out another arms race;

- **tangible, because what counts is action**. In that regard, France has taken significant unilateral measures and submits ambitious proposals for the determined pursuit of nuclear disarmament at international level. As the French President, François Hollande, emphasized in his speech in Istres on 19 February 2015: "Nuclear disarmament cannot be wishful thinking or an invitation! It needs to be demonstrated, first and foremost by the states that call for it".

France's nuclear disarmament: exemplary transparency measures

France continues to contribute actively and tangibly to disarmament, a point the French President underscored in his **speech in Istres on 19 February 2015**, where he announced important measures:

- **transparency measures on the components of France's nuclear arsenal**: three sets of 16 submarine-based missiles and 54 aircraft carrying ASMPA enhanced medium-range air-to-surface missiles. France has revealed these figures for the first time in a reasserted transparency effort. France calls on all nuclear-weapon states to make the same transparency effort for all the categories of weapons in their nuclear arsenals;

- **proposal** by France of a draft **treaty banning further production of fissile material** for nuclear weapons or other explosive devices ("Fissile Material Cut-off Treaty"). The proposed treaty was submitted to the Conference on Disarmament on 9 April 2015. The **importance of this issue** was recently reaffirmed by the French President in his speech in Istres;

- **visits of new sites that are now free of nuclear weapons**:
  - the Luxeuil airbase, whose nuclear weapons storage facilities are now empty;
  - the Plateau d'Albion, where the silos that housed the ground-based component of the deterrent have been dismantled.

Lieutenant-Colonel Papin Airbase (Airbase 116) in Luxeuil-Saint-Sauveur

Opened in 1953, the Luxeuil airbase took over the nuclear role in 1966 when it received the first nuclear-armed Mirage III E and Mirage IV A. The first **specialized ammunition storage facility (SASF)** for the AN.22 nuclear bomb was built in the same year.

In 1988, the base received the Mirage 2000N armed with ASMP medium-range air-to-surface missiles for which a new specialized ammunition storage facility went into service in 1987.

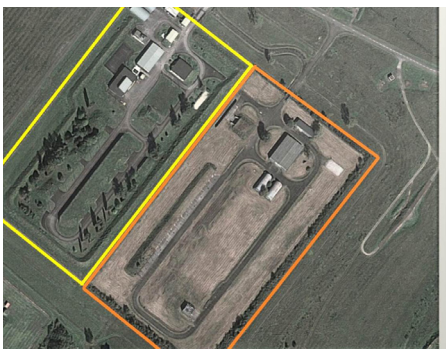
In a speech delivered in Cherbourg **on 21 March 2008**, the French President announced "**a new disarmament measure**: a one-third reduction in the number of nuclear weapons, missiles and aircraft in the airborne component".

As a result of this disarmament measure, **in 2011 the Luxeuil base lost its role in the nuclear deterrent** in favour of a "sky police" role. The nuclear-armed EC 1/4 "Dauphiné" fighter squadron was completely dismantled, whereas the nuclear-armed EC 2/4 "Lafayette" fighter squadron merged with the EC 3/4 "Limousin" squadron and is stationed at the airbase 125 in Istres since June 2011.The Luxeuil airbase now houses **the conventional EC 1/2 "Cigognes"** ("storks") fighter squadron, transferred from the airbase 102 of Dijon-Longvic **in July 2011**.

The facilities at the Luxeuil base are now used by the 23 Mirage 2000-5F of the EC 1/2 "Cigognes" fighter squadron.

Until 2011, airbase 116 comprised two specialized ammunition storage facilities: one for the AN.22 bomb, retrofitted for the ASMP, and one for the AN.52 bomb, both of which are no longer in service. The ASMP storage facility will become a **conventional weapons storage facility** by the end of 2015.

The 1/2 "Cigognes" fighter squadron, Luxeuil airbase.



Specialized ammunition storage facilities (SASF), Luxeuil airbase.
ASMP SASF (left);
AN.52 SASF (right).

Military facilities on the Plateau d'Albion (visit scheduled for June 2015)

The ground-based component of the nuclear deterrent was located on the Plateau d'Albion in south-eastern France. The site was chosen in April 1965 because of the low population density and subsoil suitable for anchoring the underground missile silos and withstand the shock wave in the event of a nuclear attack. Eighteen underground missile silos (launch facilities) and two missile launch control centres were built between 1966 and 1971. The Strategic surface-to-surface ballistic missile (SSBM) launch site was placed under the command of the strategic air force.

On 22 February 1996, the French President announced the shutdown and dismantling of the facilities on the Plateau d'Albion. The last missile stages were removed in December 1997, and the last nuclear warhead in February 1998. The dismantling process took two years and ended in 1999. Control of the site was handed to the French foreign legion in the summer of 1999.

The eighteen launch facilities, two instruction areas, two missile launch control centres, four transmitter facilities as well as the facilities of the 1st Strategic Missile Group in Biscarrosse **were methodically dismantled**. A large number of civilian and military personnel were mobilized for the dismantling process. For each launch facility, **35 tonnes of materials** were disassembled, representing **3,500 hours worked** by personnel and **3,500 kilometres driven** by special moving equipment. The nuclear decommissioning of the Plateau d'Albion cost a total of **75 million euros**.

Dismantling of the military facilities on the Plateau d'Albion

Materials extracted from the launch control centre.

Capping of ZL-1 underground missile silo.

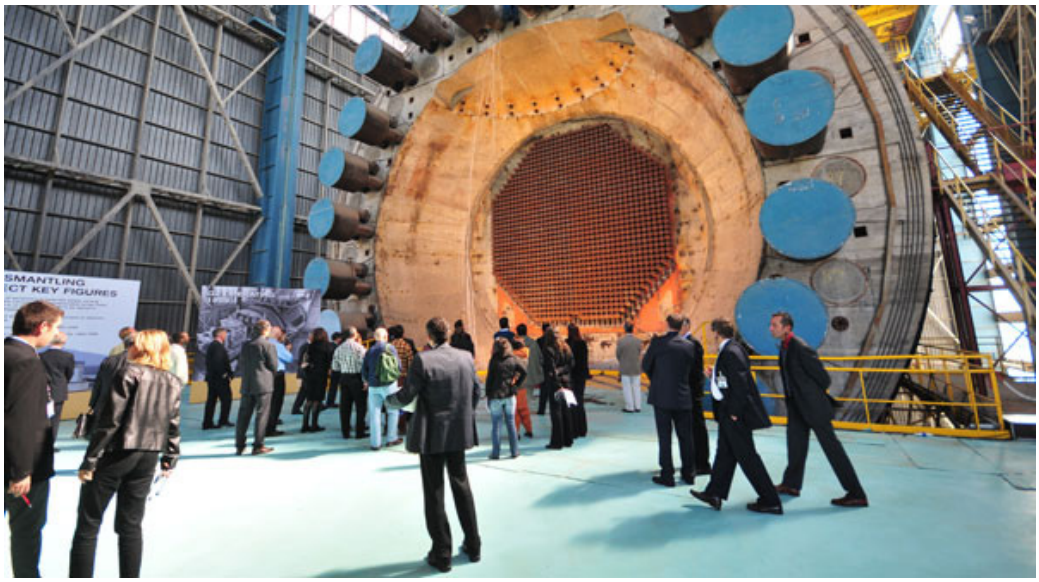
The **irreversibly dismantled** launch zones have now been converted for **civilian uses**. They now accommodate photovoltaic power stations, an astronomical observatory, a seismic station, space surveillance radar antennae for Onera, France's aerospace laboratory, and even a restaurant.

Transparency measures on fissile-material production facilities for nuclear weapons

France is the **first country to open the doors of its facilities that used to produce fissile material for nuclear weapons**. The Pierrelatte and Marcoule sites were visited by more than 40 member states of the Conference on Disarmament in 2008, and by more than 20 non-governmental experts and some 30 international journalists in 2009. These visits represent the tangible fulfilment of an undertaking made by the French President in 2008.
The participants had access to the former uranium enrichment facility in Pierrelatte, and visited one of the three plutonium-production reactors and the military reprocessing plant in Marcoule. They thus had an opportunity to observe the **tangible, effective implementation** of the decision taken by France in 1996 to cease production of fissile material for nuclear weapons and to dismantle **irreversibly** the facilities dedicated to fissile-material production in Pierrelatte and Marcoule.

Visit by representatives of the member states of the Conference on Disarmament (16 September 2008)

Pierrelatte (enrichment facility).



Marcoule (G2 plutonium-production reactor).

As planned in 2008, **the programme to dismantle the gas-cooled reactor in Pierrelatte was completed by the end of 2010**. A total of:

- 4,000 diffusers,
- 1,300 tonnes of diffusion barriers,
- 1,200 km of pipes

were disassembled and ground, producing 20,000 tonnes of waste.

Diffusers in operation in 1996, Pierrelatte facility.

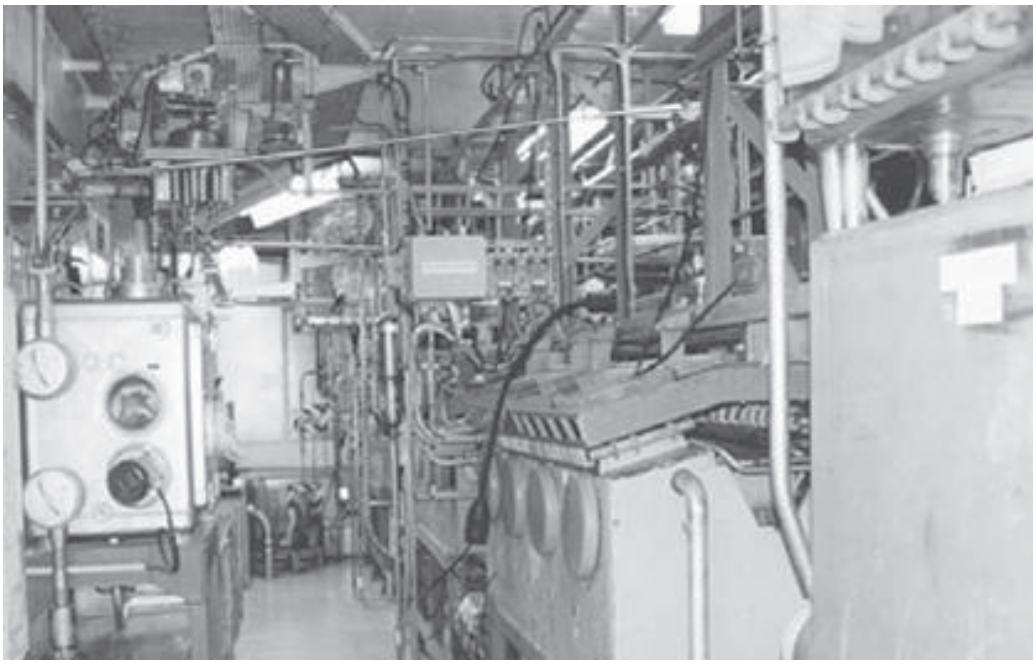
Diffusers in 2015: waste packages ready for removal to storage sites.

The dismantling operations in Pierrelatte are continuing with the removal of the radioactive waste to final storage sites (3,800 tonnes removed in 2014) and the preparation and final decontamination of the now empty halls of the facility.

In Marcoule, the first phase in **dismantling the G1, G2 and G3 reactors** consisted in disassembly of all the external circuits and confinement of the reactors, rendering the dismantling operations irreversible from 2008. The reactor control room buildings were demolished at the end of 2010. The next phase, before the final dismantling of the three reactors, will consist in removal of the graphite from the reactors. Final clean-up will take place in the 2040s.

Regarding the **UP1 plant in Marcoule that reprocesses spent nuclear fuel**, dismantling of the equipment used to separate uranium and plutonium was completed in 2010, the dismantling of the spent fuel dissolvers was completed in 2012, and the dismantling of the lines that extract the fission products was completed by the end of 2013. Dismantling of the main components of the plant will be completed by 2020. The waste will be fully retrieved around 2035 for disposal in deep geological repositories. Some 8,000 of the 60,000 drums of waste embedded in bitumen have already been reconditioned.

France has already spent **almost 3 billion euros** on dismantling fissile-material production facilities for nuclear weapons. The estimated total cost of dismantling is **8 billion euros**.



Plutonium processing unit in service, UP1 plant in Marcoule. Plutonium processing unit in service, UP1 plant in Marcoule.

Processing unit after clean-up.

Transparency measures on the former nuclear test site in the Pacific

In 1998, France allowed **international experts conducting a study for the IAEA to take samples at the Mururoa and Fangataufa sites**, where the infrastructure of the Pacific Test Centre (CEP) has been **irreversibly** dismantled and decontaminated. The study found that the atolls presented no radiological risk for the current and future population of Polynesia. The experts concluded that the sites required no remediation or surveillance. France nevertheless decided to maintain radiological and geo-mechanical surveillance of the atolls.

1966, "frigate" area, Fangataufa Atoll.

1998, "frigate" area after the shutdown of the Pacific Test Centre.

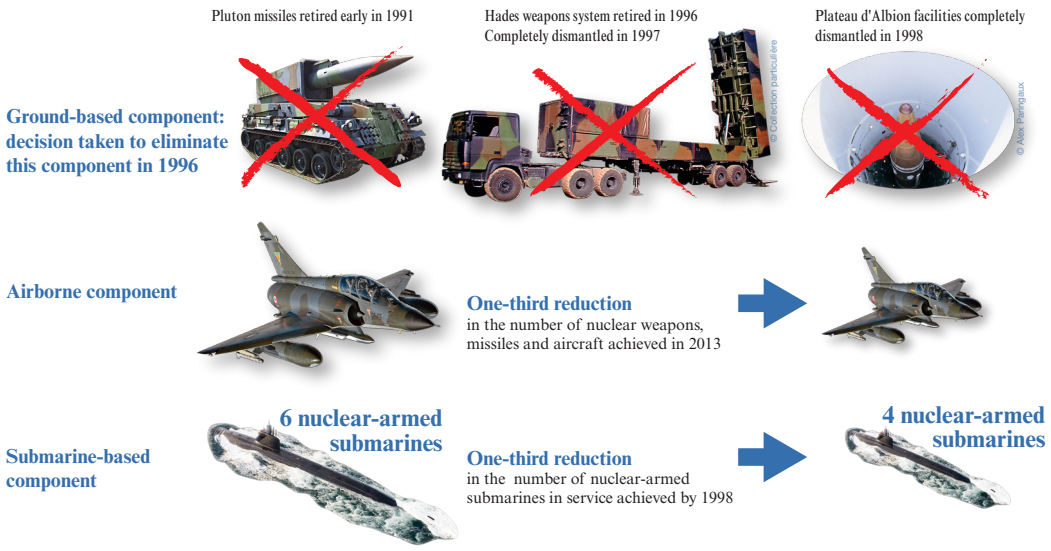
These visits represent **an unprecedented gesture of transparency** by a nuclear-weapon State. France encourages all the nuclear powers to organize similar visits for its experts. In the same spirit, the French President, François Hollande, announced further visits in his speech in Istres.

France and disarmament: review of actions

The size of France's nuclear forces is determined by a principle of **strict sufficiency**. By virtue of that principle, France's nuclear arsenal, which guarantees the credibility of our deterrent, is maintained at the lowest possible level that is compatible with the strategic context and foreseeable developments of the threat.

Changes in the strategic context have enabled us to **downsize our forces**. France **has halved its nuclear arsenal over the past almost ten years**. France has halved the number of its nuclear-armed craft since 1985. **The budget for the nuclear deterrent has been halved over the past 20 years**. Spending on the deterrent now accounts for roughly **0.17% of France's GDP** (compared with 0.48% on average between 1960 and 2000, with a peak of 1.06% in 1967).

Reduction in France's nuclear arsenal



To date, France has already:

- fully dismantled the **ground-based** component of its nuclear deterrent: France is the only country to have fully dismantled its ground-based nuclear component;

- reduced its **submarine-based** component: the number of nuclear-armed submarines in service has been reduced from six to four;

- reduced its **airborne** component:
  - the AN.52 nuclear bombs carried by Jaguar and Mirage III aircraft were early removed from service and dismantled;
  - the Mirage IV strategic aircraft no longer carry nuclear missiles;
  - a one-third reduction, announced in 2008, in the number of nuclear warheads, missiles and aircraft of the airborne component, which brings the total French nuclear arsenal to fewer than 300 warheads.

The French President, in a transparency effort, reported on 19 February 2015 that France maintains three sets of 16 submarine-based missiles, and 54 aircraft carrying ASMPA enhanced medium-range air-to-surface missiles.

The downsizing of the nuclear forces has been accompanied by an equally significant reduction in alert levels. France has scaled back the permanent level of alert of its nuclear forces twice, in 1992 and 1996. **This has affected both reaction times and the number of weapons systems on alert**.

In particular:

- since 1996, France has had only one nuclear-armed submarine always at sea;

- since nuclear missiles were removed from the Plateau d'Albion, **France no longer has any nuclear weapons systems on permanent high alert**;

- France also announced in 1997 and continuously reaffirmed since that **all of its nuclear weapons have been detargeted**.

France's nuclear posture is neither "launch on warning" nor "launch under attack" nor what some commentators call "hair-trigger alert". Strict procedures are in place to ensure that no weapon can be used without an order from the French President. Decisions about alert levels and the nuclear posture are taken by the French President.
