

Non multa, sed multum

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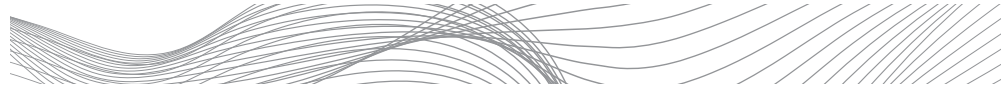
Global Edition

Alexandra Zubenko

ROLE OF NUCLEAR WEAPONS IN THE MODERN STRATEGIC CULTURE OF FRANCE



MOSCOW, 2023



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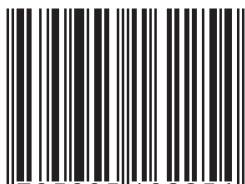
Currently, due to the growing tensions, the nuclear factor has been playing an increasingly important role on the international arena. The problems of nuclear disarmament and nonproliferation continue to be one of the main concerns for the international community. Traditionally, Russian and foreign experts pay more attention to the study of the nuclear doctrines of Russia and the United States – the states with the largest nuclear arsenals. In this regard, the nuclear factor in the foreign policy of other countries, especially medium-sized states such as France, is often underestimated. Meanwhile, the issue of multilateral disarmament is a matter of the future and the effectiveness of the nonproliferation regime depends on how it will be resolved. The goal of this research paper is to analyze the role of French nuclear weapons in the strategic culture of France at the present stage (1991-2023).

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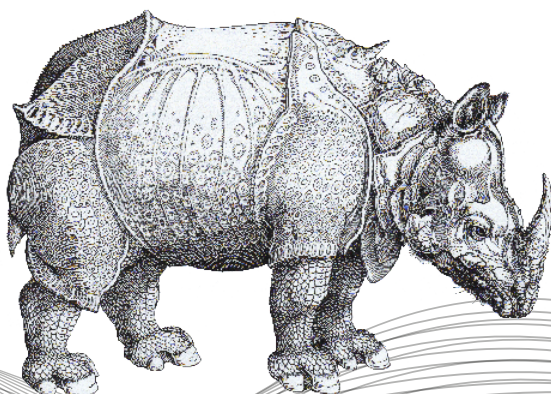
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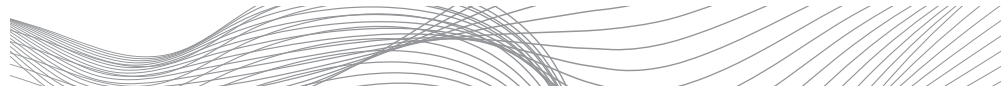
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Highlights

- The basis of the French nuclear doctrine, laid down in the second half of the XX century, has remained almost untouched: it is formed by the principles of *strict sufficiency*, *reliability* and *continuity*. The threshold for the use of nuclear weapons continues to be a threat to the vital interests of the nation. French nuclear doctrine reserves the right on the first strike, which is called the *last warning* in French doctrine.
- Historically, France has positioned its arsenal as independent and has always opposed to taking it into account at the US-Soviet (and then Russian) arms control talks.
- The modern French nuclear arsenal consists of an air (land-based and ship-based fighters) and a marine (SSBNs) component which is considered to be strategic and main. It annually spends about 90% of the entire budget allocated to the country's nuclear forces.
- Plans for the development of the French Strategic Nuclear Forces imply the modernization of warheads to increase the effectiveness of overcoming missile defense, new design and construction for the third generation of SSBNs, as well as the design of new nuclear warheads by 2040.
- In recent years, there has been an increase in the influence of the *Atlantic factor* on the foreign and defense policy of Paris, which is reflected, among other things, in the national nuclear doctrine.
- In this regard, France is ceding the role of a nuclear shield Western Europe, the United States and NATO, abandoning previous claims to leadership in ensuring the strategic autonomy of the EU.



ROLE OF NUCLEAR WEAPONS IN THE MODERN STRATEGIC CULTURE OF FRANCE

Alexandra
Zubenko

Currently, due to the growing tensions, the nuclear factor has been playing an increasingly important role on the international arena. The problems of nuclear disarmament and nonproliferation continue to be one of the main concerns for the international community. Traditionally, Russian and foreign experts pay more attention to the study of the nuclear doctrines of Russia and the United States - the states with the largest nuclear arsenals. In this regard, the nuclear factor in the foreign policy of other countries, especially medium-sized states such as France, is often underestimated. Meanwhile, the issue of multilateral disarmament is a matter of the future and the effectiveness of the nonproliferation regime depends on how it will be resolved. In addition, France's membership in the nuclear club concerns Russia's security interests, since, firstly, France, as a member of the nuclear five, participates in the NPT Review process, and secondly, France is a member of NATO and often acts in line with the Atlantic policy that is not friendly to Russia.

The purpose of this work is to analyze the role of French nuclear weapons in the strategic culture of France at the present stage (1991-2023).

Strategic culture is understood as “an integrated system of symbols (i.e. argumentation, language, analogies, metaphors, etc.) that make it possible to establish stable and long-term strategic preferences through the formulation of concepts of the role and effectiveness of military force in interstate political relations”¹.

¹ Alekseeva, T. A. Strategic culture: evolution of the concept // Polis. Political Studies. No. 5. 2012. pp. 130-147. URL: https://elibrary.ru/download/elibrary_17889168_62203957.pdf

HISTORICAL OVERVIEW

On November 7, 1961, France conducted the first nuclear test and joined the club of nuclear states, which at that time included the United States, the USSR, and the United Kingdom. The production of the first atomic bomb was one of those projects that marked the adoption by France of a new political course: the policy of *greatness (grandeur)*, proclaimed by de Gaulle after coming to power in 1958². According to Raymond Aron, the indicator of the *foreign policy power* of the state is the ability to “impose its will on other states”³. President de Gaulle was conscious that after the Second World War, only the USSR and the USA were truly world powers. French capabilities were incomparable with American and Soviet ones, so de Gaulle did not set out to achieve the same status for France. Nevertheless, it was important for him to provide France with a global role, that is, to make the world powers to take into account the will of France when making decisions. For a medium-ranking power, which was France, this was not an easy task. The main obstacle was the lack of resources for its implementation, the so-called *capabilities-expectations gap*⁴. Consequently, France was trying to find resources that would ensure it, if not the status of a world power, then the status of a country with *global responsibility*.

The second important motive for France to build its own nuclear weapons was the gradual understanding that the collective security guarantees provided by the United States within NATO are not unconditional. Unless American and European interests match, not only the United States will hardly be ready to provide military assistance, but may themselves exert pressure on its allies. In the words of the French historian M. Weiss, France had to defend itself against allies rather than arm itself against opponents⁵. This was clearly demonstrated by the Suez crisis of 1956, when the United States actually forced France and Great Britain to stop the military operation against Egypt. The defeat in the Indochina war was also associated with insufficient support from the United States (in particular, France asked the United States to use nuclear weapons in the Battle of Dien Bien Phu, but the United States refused). As a result, although de Gaulle stressed that American nuclear weapons remain the most important guarantee of global peace, “they cannot be an unconditional and immediate response to all unforeseen events concerning Europe



Testing of French
thermonuclear weapon as
part of *Operation Canopus*,
24 August 1968

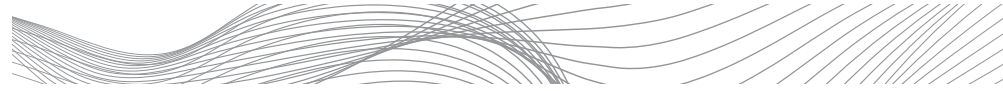
Source: www.la1ere.francetvinfo.fr

² The history of the French nuclear program // PIR Center Website. URL: <https://pircenter.org/static/istoriya-francuzskoj-yadernoj-programmy>.

³ Aron, R. Macht, Power, Puissance: prose démocratique ou poésie démoniaque? // European Journal of Sociology. № 5. 1964. P. 27–51. URL: <http://www.jstor.org/stable/23998450>

⁴ Hill, C. The capability–expectations gap or conceptualizing Europe’s international role // Journal of Common Market Studies. 1993. № 31. P. 305–328.

⁵ Vaisse, M. Le choix atomique de la France (1945–1958) // Vingtième Siècle, revue d’histoire. Octobre–Décembre 1992. № 36. Dossier: Identités d’Europe Centrale après le communisme. P. 21–30.



The important motive for France to build its own nuclear weapons was the gradual understanding that the collective security guarantees provided by the United States within NATO are not unconditional

and France”⁶. Therefore, French nuclear weapons were created primarily as a guarantee of France’s independence, its *special* position in NATO.

In addition, by developing its own nuclear weapons, France hoped to secure a *special* position within NATO decision-making system. The fact is that by the mid-1950s there was an imbalance of forces within the alliance: The US and the UK had much more weight in the NATO Council than other member states, including France. France tried to fix this by proposing to create a triumvirate of the victorious powers (France, Great Britain and the USA), which would play the first fiddle in making military and political decisions of the alliance. The US refused. De Gaulle also demanded that France participate in making decisions on the use of nuclear weapons in the event of a major war and opposed the fact that US nuclear weapons on the territory of Europe (*Nuclear Sharing*) were controlled exclusively by Washington. And even after France became a nuclear power, the United States refused to grant it any privileges in the alliance, which was one of the reasons for France’s withdrawal from the NATO military organization in 1966.

Also, France was motivated by the desire to become a leader in the creation of European defense, which was to be supported by French nuclear weapons. The European defense project, in turn, was serving two goals: preventing the militarization of Germany and providing Western European countries (France, Germany, Benelux) with influence in a bipolar world.

Finally, in 1952, the United Kingdom acquired nuclear weapons, which, of course, increased its ability to influence international and European politics. From that moment on, for France, the acquisition of its own nuclear weapons is connected not only with prestige issues, but also with the balance of power in the region. Charles de Gaulle, during his speech in Narbonne dedicated to the creation of the French nuclear weapons, said that “France should not kneel before its allies”⁷.

From this it can be concluded that, unlike the Soviet and American nuclear weapons, the creation of the French nuclear potential was due equally to political considerations and military necessity. Creating the atomic bomb, France was guided by the following goals: securing for France the same role in the alliance as the United Kingdom and the United States through the potential triumvirate of powers in NATO, the creation of an autonomous security system in Europe, ensuring the independence of the state in the international arena. At the same time, in a dialogue with the allies, France explained that French nuclear weapons should be a contribution to

⁶ Buchalet, C. Histoire de la bombe atomique française // Société française d’énergie nucléaire. 2019. P. 27. URL: <http://www.sfenbourgogne.fr/media/Conferences/Buchalet/HISTOIRE%20DE%20LA%20BOMBE%20ATOMIQUE%20FRANCAISE%20rev1%20images0.pdf>

⁷ Discours du général de Gaulle à Narbonne. 26 Février 1960. URL: <https://www.ina.fr/ina-eclaire-actu/video/caf90041727/discours-du-general-de-gaulle-a-narbonne>.

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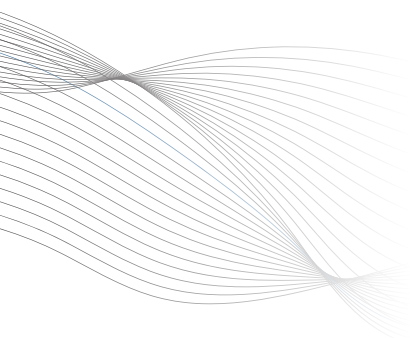
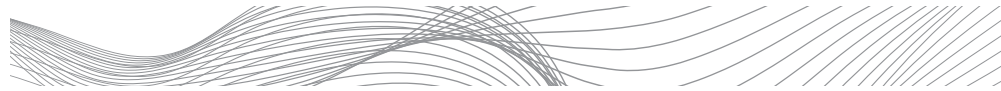
the overall system of deterrence of the Western bloc. The United States and Great Britain were suspicious of this thesis, because de Gaulle declared the French nuclear arsenal independent. As a result, as A. Pavlov and A. Malygina state, “from the point of view of American strategists, the French concept of “detering the strong by the weak” was erroneous, “the developers of the Anglo-Saxon doctrine were convinced that the creation of French independent nuclear forces reduced the level of clarity and accuracy in the issue of a possible retaliation strike, which undermined the very system of deterrence. Let us explain that traditionally the American concepts of deterrence were based on the idea of the need to provide clarity about exactly in which cases the actions of the USSR would cause a retaliatory nuclear strike”⁸.

The *independence* of the French nuclear policy was also expressed in the fact that France, being already recognized as a nuclear state, refused to sign the NPT in 1968, although it declared that it would adhere to the terms of the treaty. The reason why the treaty was not signed was that the USSR and the US played the main role in the negotiations on the treaty. In addition, as it is known at that time, France was an active supplier of nuclear technologies to Iran, Iraq, South Africa and Pakistan. Export restrictions imposed by the NPT were not in the interests of the Fifth Republic, especially since the development of French nuclear energy depended on these contracts, the financing of which was a very difficult task in the conditions of post-war economic recovery. And although even when signing the NPT, France declared that it would adhere to the terms of the treaty without being a member of it, in fact, France’s compliance with the terms of the treaty began after V. Giscard-d’Estaing came to power⁹.

Despite the fact that the principles of French nuclear policy were laid down 60 years ago, many of them remain the basis of the French nuclear doctrine to this day and are important for understanding the role of nuclear weapons in the modern strategic culture of France.

⁸ Pavlov Yu., Malygina A. France’s nuclear strategy in the late 1950s-early 1960s. URL: <https://cyberleninka.ru/article/n/formirovanie-yadernoy-strategii-frantsii-v-kontse-1950-h-nachale-1960-h-gg>

⁹ Soutou G. La France et la non-prolifération nucléaire // Revue historique des armées. 2011. N° 262. URL: <http://journals.openedition.org/rha/7154>



CHAPTER 1. BASIC CONCEPTS AND PRINCIPLES OF THE FRENCH NUCLEAR DOCTRINE

1.1 Modern French nuclear doctrine

The modern French nuclear doctrine is not presented in a separate document. Its basis is the White Paper on Defense and National Security Issues, which are updated by each new president. In addition, it is generally recognized that statements by the President of the Republic, the Minister of Defense, the Minister of Foreign Affairs, the Chief of the General Staff of the French troops, official documents that identify the challenges and threats that the State sees before it at the moment, and describe the role of nuclear weapons in responding to them, are also part of the doctrine. The absence of a separate document indicates that although the French deterrence is traditionally a symbol of national sovereignty and independence of France, its role in ensuring the security of the state, in demonstrating its military power, is significantly lower than in the strategy of Russia and the United States. The last book was published in 2013 under F. Hollande.

The concept of *deterrence* is defined in the 2013 White Paper on Security and National Defense as follows: "Nuclear deterrence is designed to protect France from any state aggression against its *vital interests*, whatever origin and character it is"¹⁰. The peculiarity of the French concept of deterrence is that it has always been perceived as *deterrence of the strong by the weak*, i.e. France does not attempt to acquire a nuclear arsenal comparable to the arsenals of Russia and the United States.

At the same time, its arsenal is at a level sufficient to inflict unacceptable damage to the aggressor. Secondly, French deterrence is also commonly characterized as *omnidirectional* (*tous azimuts*), which was introduced by De Gaulle during the Cold War. It implies that France, on the one hand, does not define a potential enemy, and on the other - that its nuclear weapons can reach any potential aggressor.

MAIN PRINCIPLES OF FRENCH NUCLEAR DOCTRINE



strict sufficiency
290 warheads
a minimum number to inflict "irreparable damage"

vital interests
territory
population
sovereignty
threshold for the first nuclear strike

independence
not part of NATO Nuclear Planning Group
the decision on a strike might be taken only by the French President

continuity & reliability
1 SSBN
is always on a combat patrol

Compiled by the author, 2023

¹⁰ White Paper on Defence and National Security 2013. P. 74. URL: <https://www.defense.gouv.fr/english/dgris/defence-policy/white-paper-2013/white-paper-2013>

1.2 Principles of continuity and reliability

The principles of the French nuclear doctrine, which developed in parallel with the British and American, were laid down in the 1960s and have remained unchanged to this day: these are the principles of *strict sufficiency*, *reliability* and *continuity*, or as French expert C. Brustlein writes, “possession of a limited but advanced nuclear arsenal, the strength of which it would not cause doubts among opponents”¹¹.

The principles of continuity and reliability are the basic principles of all nuclear Powers. *Continuity* means that nuclear weapons must always be in a combat state, because only then can they be a guarantor of security. Quoting the words of President Macron, “by definition, deterrence is carried out continuously. What would a *non-permanent* deterrence be?”¹². The constant combat readiness of submarines is ensured by constant combat patrols. Experts agree that it is the SSBNs that will be used, if necessary, to strike back, because *continuity* also involves constant training of personnel and modernization of the arsenal. Taking into account the principle of *strict sufficiency*, which will be discussed later, France must maintain 4 submarines in combat condition (*Triomphant*, *Téméraire*, *Vigilant* and *Terrible*) capable of carrying up to 16 M-51 ICBMs with a capacity of about 100 ktns each.

The concept of *reliability* assumes that nuclear weapons, the use of which guarantees the infliction of *irreparable damage* to the enemy, is currently the only instrument to deter any aggression. The 2013 French White Paper states that nuclear deterrence is “protection from any attacks by States that infringe on our [France’s] *vital interests*,” “the last guarantee of the security, protection and independence of the nation”. It is emphasized that nuclear deterrence also guarantees “independence in decision-making and freedom of action in fulfilling international obligations, as well as protection against blackmail attempts that may be directed against us in the event of a crisis”. That is, the *reliability* of nuclear weapons lies in the fact that it acts as a guarantor of French sovereignty.

In addition, as B. Tertrais notes, the principle of reliability means that only the president of the country, “elected by direct universal suffrage,” can make a decision on the use of nuclear weapons, which practically eliminates the risk of accidental use of nuclear weapons.



SSBN *Triomphant* class

Source: www.brussels-school.be

¹¹ Brustlein, C. Forces nucléaires françaises: quel renouvellement? // Politique étrangère. 2017. N° 3. P. 114. URL: https://www.nonproliferation.eu/wp-content/uploads/2019/11/brustlein_pe3-2017.pdf

¹² Discours du Président Emmanuel Macron sur la stratégie de défense et de dissuasion devant les stagiaires de la 27ème promotion de l'école de guerre // Elysee. 7 Février 2020. URL: <https://www.elysee.fr/emmanuel-macron/2020/02/07/discours-du-president-emmanuel-macron-sur-la-strategie-de-defense-et-de-dissuasion-devant-les-stagiaires-de-la-27eme-promotion-de-lecole-de-guerre>



1.3 The concept of *vital interests*

The powers of the president to make a decision on a nuclear strike are closely related to the concept of *vital interests* of the state, which is a kind of threshold for the use of nuclear weapons in the French doctrine. Thus, it is the president who defines the *vital interests* of the state and assesses the threat level in relation to these interests. The concept of *vital interests* was first given in the 1994 White Paper, but since then it has been amended more than once. In the 1994 White Paper, France defined its *vital interests* as follows: “The integrity of the national territory, including the mainland, as well as overseas departments and territories, the free exercise of sovereignty and the protection of the population”¹³. By “free exercise of sovereignty” is meant not only the protection of the territory, but also protection from interference by other States in the internal affairs of France, political blackmail and pressure. In 2006, in his speech, J. Chirac supplemented these principles by stating that “the protection of allied countries is, among other things, the interests that need to be protected”¹⁴. At the same time, the president did not explain which allies he was talking about. In 2020, the current President E. Macron said that “France’s *vital interests* now have a European dimension”. The President also stressed: “In this regard, I would like to develop a strategic dialogue with our European partners on the role of the French nuclear deterrent in our concept of collective security...This strategic dialogue and exchanges will naturally contribute to the development of a genuine strategic culture of European states”¹⁵. However, as an anonymous source, a retired French general, told the author, there was no consensus on this issue in France: “There are still sometimes disputes about this in the Ministry of Defense. The so-called *purists* believe that the inclusion of European interests in the orbit of *vital interests* will undermine the sovereignty of France”¹⁶.

As B. Tertrais notes, the concept of *vital interests* is not limited only to European partners: France, for example, has “defense agreements with the countries of the Persian Gulf (Kuwait, Qatar, UAE).” In general, uncertainty about this concept leaves France room for maneuver and “complicates the calculation of the enemy planning an attack”¹⁷.

¹³ Livre Blanc de la Defense. 1994. URL: <http://www.livreblancdefenseetsecurite.gouv.fr/pdf/le-livre-blanc-sur-la-defense-1994.pdf>

¹⁴ Chirac, J. “Protéger nos intérêts vitaux” // Le Monde. 19 January 2006. URL: https://www.lemonde.fr/idees/article/2006/01/19/protoger-nos-interets-vitaux_732429_3232.html

¹⁵ Discours du Président Emmanuel Macron sur la stratégie de défense et de dissuasion devant les stagiaires de la 27ème promotion de l'école de guerre // Elysee. 7 February 2020. URL: <https://www.elysee.fr/emmanuel-macron/2020/02/07/discours-du-president-emmanuel-macron-sur-la-strategie-de-defense-et-de-dissuasion-devant-les-stagiaires-de-la-27eme-promotion-de-lecole-de-guerre>

¹⁶ Interview with the author. 3 June 2021.

¹⁷ Tertrais, B. French Nuclear Deterrence Policy, Forces, And Future: A Handbook // Recherches & Documents. 2020. N° 4. P. 26. URL: <https://www.frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2020/202004.pdf>

1.3.1 Vital interests of France and the last warning

The possibility of a preemptive strike in the French nuclear doctrine was called the *last warning* (*ultime avertissement*). The meaning of the *last warning* is that a targeted nuclear strike that does not cause irreparable damage to the enemy will have to dissuade him from harming the *vital interests* of France. This right is not enshrined in the White Books, but every French president since F. Mitterrand recalls it in his speech on the nuclear doctrine. As noted by F. Hollande in his speech in 2015: “I cannot rule out that the enemy may make a mistake in defining our *vital interests*. That is why I want to remind you that France can, as a last resort, declare its readiness to protect its *vital interests* by warning with the use of nuclear weapons.” However, the Russian official side does not agree with the term *last warning* or *preemptive strike*, which France uses when, in fact, it is a question of *first strike*.

Indeed, France allows the use of nuclear weapons not only in response to the threat of the use of nuclear weapons against it, but also in the case of any other threat to its *vital interests*. Thus, it can be used in response to an attack using biological and chemical weapons, which was first stated by Jacques Chirac in 1995: “As responsible for the future and security of our country before my nation, I am obliged to remind the French that only deterrence is a guarantor for France against the possible use of weapons of mass destruction, regardless of its character”¹⁸.

According to B. Tertrais, technological threats, in particular cyberattacks that will affect the *vital interests* of the Fifth Republic, may also be a threshold for the *preventive* use of nuclear weapons.

What is the difference between a *last warning* and a first strike in France’s opinion? The fact that in the case of a preemptive strike, we are talking exclusively about a strike using a low-power nuclear warhead. According to A. Baconnet, the first detailed definition of the concept of the *last warning* was given in 1981 by the Chief of the General Staff of the French Armed Forces, J. Lacaz during his press conference at that time: “our concept of use or non-use (...) It consists in preventing a sudden threat or the use of tactical nuclear weapons with the *last warning* that would be sent to the aggressor before the use of strategic weapons in order to force him to abandon his venture. This means that this warning should have a military effect, that is, be effective and cruel, which means relatively massive use, that is, still limited in time and space. But first of all, it is necessary that this warning fits well into the overall deterrent maneuver. The commission of this general deterrent maneuver can be the prerogative of only the highest political leadership, and not only the military command. This concept leaves open a fairly wide range of possible options: preliminary fights, followed by

France allows the use of nuclear weapons not only in response to the threat of the use of nuclear weapons against it, but also in the case of any other threat to its *vital interests* (*intérêts vitaux*)

¹⁸ Speech by the President of the French Republic, Jacques Chirac, at the meeting of Ambassadors, Paris, 31 August 1995.



a strike with our tactical nuclear forces, or strikes preceded by a classic battle of a certain duration <...>. But it excludes a number of solutions such as a warning signal or a flexible response”¹⁹.

In fact, the French idea of the *last warning* is similar to the idea of a limited nuclear war developed by the United States in the 1960s and 1970s. The main similarity between them was that both ideas assumed the use of TNW, in case it was impossible for the enemy to win with conventional weapons. However, during the Cold War, France, unlike the United States, allowed the use of TNW only in the event of a threat to its own territory, sovereignty, and not the territory of the entire alliance. Now this threshold is rather lowered, since in October 2022, President Macron confirmed his thesis that French nuclear weapons are designed to meet common European interests: “Today, more than yesterday, France’s *vital interests* have a European dimension”²⁰.

According to French military experts, it is most likely that the *last warning* can be carried out with the help of an air-launched cruise missile ASMP-A, which can carry a thermonuclear warhead with a capacity of 300 ktn²¹. However, in the event of a warning strike, according to A. Baconnet, a warhead with an explosion power of less than 1 ktn or several kilotons will be used²². The expert also notes that in a particularly dangerous situation, it is possible to imagine the use of SLBMs for the purposes of a preemptive strike. At the same time, such a decision would be associated with risk, because the enemy may have time to intercept the missile and retaliate.

1.4 The principle of strict sufficiency

Central to France’s nuclear doctrine is the principle of *strict sufficiency*. According to P. Boniface, such a formulation helps to *smooth out* the disproportionality between the “French nuclear arsenal and the aspirations laid down in the French doctrine”²³. In the 2013 White Paper, *strict sufficiency* appears as the principle of maintaining the nuclear arsenal “at the lowest possible level that is possible in the given strategic context,” or, as it is sometimes also explained, at a level sufficient to cause irreparable damage. This principle is close to the British principle of *minimum deterrence* and includes the following components.

1. *Strict sufficiency* means that France does not pursue the goal

¹⁹ Baconnet, A. Les mutations du concept d’ultime avertissement // Revue Défense Nationale. 2016. N° 9 (794). P. 117. URL: <https://doi.org/10.3917/rdna.794.0116>.

²⁰ Interview avec Emmanuel Macron // L’événement. Émission du mercredi. 26 Octobre 2022. URL: <https://www.france.tv/france-2/1-evenement/4219399-emission-du-mercredi-26-octobre-2022.html>

²¹ Finaud, M. La France et l’ultime avertissement : une dangereuse dérive // Initiatives pour le Désarmement Nucléaire. 14 September 2020. URL: <https://www.idn-france.org/nos-publications/actualites/france-ultime-avertissement-dangereuse-derive/>

²² Baconnet, A. Les mutations du concept d’ultime avertissement // Revue Défense Nationale. 2016. N° 9 (794). P. 116-120. URL: <https://doi.org/10.3917/rdna.794.0116>.

²³ Boniface, P. Repenser la Dissuasion nucléaire. Editions de l’Aube, 1997. 214 p. URL: <https://www.iris-france.org/publications/repenser-la-dissuasion-nucleaire/>

of destroying the enemy with nuclear weapons, since it provokes an arms race, forces states to compete in building up their nuclear arsenal. I.e., the principle of *strict sufficiency*, according to the official position, assumes that French nuclear weapons are sufficient to cause irreparable damage, but not to destroy the enemy.

2. The definition of *strict sufficiency* implies not only having the sufficient number of warheads, but also developing of a clear and precise plan for the modernization, which will make nuclear weapons more effective, less costly and, possibly, will allow to reduce the number of warheads. So, in the mid-1990s, Jacques Chirac's *reform in defense*, under which there was a significant renewal of the French nuclear forces, made it possible to reduce the nuclear arsenal and abolish the ground component. Further, in 2009, the number of squadrons of nuclear-weapon carrier aircraft was reduced, due to the improved characteristics of the new onboard missile that entered service at that time. And then France even refused to place nuclear warheads on ship-based fighters.

3. Finally, France undertakes to "adapt the nuclear arsenal to a rapidly changing strategic context"²⁴. This means that the number of warheads and carriers may change depending on how the threats and their perception by Paris will change.

Thus, the French nuclear doctrine is based on three principles: *reliability*, *continuity* and *strict sufficiency*. Two of them are traditional for the nuclear doctrine as a whole and contribute to the understanding of nuclear deterrence as the last guarantee of the security and independence of the State. The principle of *strict sufficiency*, in turn, serves to justify France's small nuclear potential compared to the United States and Russia. An important place in the doctrine is given to the concepts of *vital interests* and *last warning*, which serve as a threshold for the use of nuclear weapons against an unfriendly State.

1.5 The problem of the independence of the French nuclear arsenal and the prospects for multilateral disarmament

Historically, France has positioned its arsenal as independent and has always opposed taking it into account when calculating NATO's joint nuclear forces. When in 1979, during the Euromissile crisis, in response to the deployment of the USSR SS-20 in the European part of its territory, NATO decided to deploy new *Pershing* and *Tomahawk* missiles in five Western European countries, F. Mitterrand supported the *double solution*, while emphasizing that this crisis, "which is the most serious since the Caribbean crisis" should give impetus to

²⁴ Tertrais, B. French Nuclear Deterrence Policy, Forces, And Future: A Handbook // Recherches & Documents. 2020. N° 4. P. 30. URL: <https://www.frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2020/202004.pdf>



the negotiation process between the USSR and the USA. The negotiation process has indeed begun, but France refused to participate in it, despite the fact that the USSR demanded that British and French missiles be taken into account in the INF negotiations. F. Mitterrand then stressed that French nuclear missiles are not *medium-range* missiles, therefore they should not be accountable under the new treaty²⁵. As explained by F. Mitterrand: “The consequence of this Soviet request, which I rejected, is that if our SLBMs, which currently can reach 3,500 kilometers, 4,000 kilometers, were taken into account when discussing medium-range missiles, we would witness this strange spectacle, [...] when two foreign the states would dispose of our weapons, and these weapons are submarines, while they would not discuss their submarines. Soviet and US SLBMs are not discussed because they are strategic, just like ours. As a result, all of our 98 nuclear weapons would be immediately absorbed by this new treaty, and assuming that they are frozen, what will remain, Monsieur de Virieu, [...] – nothing but its conventional armed forces and various types of weapons of a completely different order”²⁶. Another argument was that the Warsaw Pact had a numerical superiority in conventional weapons, and, as is known, one of the most likely scenarios for the use of nuclear weapons by France was the scenario of an attack by the Warsaw Bloc from the territory of the GDR on the FRG with conventional weapons. As a result, French and British missiles were not accountable to the INF Treaty.

The problem of the independence of the French nuclear arsenal became relevant again after France returned to the NATO military organization in 2009. So far, this step has been evaluated ambiguously both in the expert and in the political environment. However, there are quite clear motives behind it: the need to consolidate the West in the face of a strengthening Russia and France’s desire to make NATO more pro-European, restraining the growing influence of Eastern European countries on discussions within the alliance and its decisions. Without taking part in the discussion of military issues, France, according to N. Sarkozy was deprived of an important tool of influence. In addition, the events in Georgia in August 2008 exposed the lack of a unified position between the members on key issues of European security. Having decided to return to NATO, France hoped, as one of the main EU players, to make a decisive contribution to solving these problems. It is important to emphasize that the return to the NATO military organization did not imply consent to a unipolar world or renunciation of

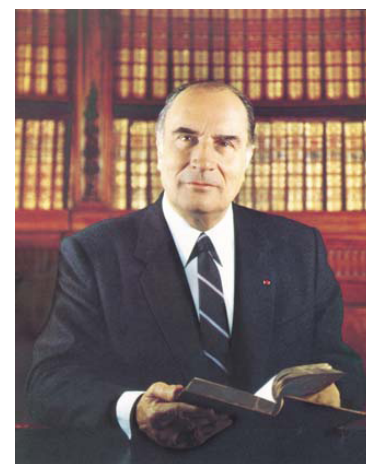
²⁵ Face à la crise des Euromissiles : la politique de dissuasion française: interview avec François Mitterrand // Institut François Mitterrand. 16 Novembre 1983. URL: <https://fresques.ina.fr/mitterrand/fiche-media/Mitter00041/face-a-la-crise-des-euromissiles-la-politique-de-dissuasion-francaise.html>

²⁶ Ibid.

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sovereignty. In the 2008 White Paper it is noted that “transatlantic cooperation platforms where strategic issues are discussed and in which we [France] do not participate, for example, in the Military Command, act on the basis of consensus and do not affect national sovereignty in any way”. The White Paper also states that this decision only strengthens the rapprochement between France and the alliance, since France actively participates in the international forces of NATO, in all multilateral committees, except for the military and the Nuclear Planning Group, contributes to the budget of the organization²⁷. The nuclear factor in this case played a symbolic role, emphasizing the *special* independent position of France in the alliance, and helped to balance the policy of *rapprochement* with NATO: after all, France still remained outside the NATO Nuclear Planning Group. In addition, after the decision was made to return to the NATO military organization, the 2008 White Paper noted that “no type of force will be permanently placed under NATO command in peacetime”²⁸.

At present, we can say that the task of preventing the *atlanticization* of the EU, which France set when returning to the NATO military organization, has not been fulfilled. On the contrary, France’s rapprochement with NATO had the opposite effect – the *atlanticization* of French foreign policy. Today, France is willy-nilly drawn into a direct confrontation between the alliance and Russia, which is actively promoted and imposed by the countries of Eastern Europe. As E. Obichkina writes, “pushing away from Russia” contributes to the EU identity consolidation, which by its nature is heterogeneous. Despite the fact that the Russophobic pathos of the geopolitics of the *new* EU members – the Baltic States and Poland, as well as Sweden – has rather a historical explanation, it became the common position for the whole EU. This choice contradicted the traditional geostrategy of the Fifth Republic, but France, initially not sharing it, did not dare to actively resist it, respecting the desire of the former socialist countries to break with the Soviet past”²⁹. This imposed perception of Russia, a state with which France has neither common borders nor historically insoluble contradictions, as a direct threat leads to the situation when nuclear factor plays bigger role in Russian–French relations. So, in March 2022, after the increase in the level of combat readiness of the Russian strategic nuclear Forces, which was announced by Russian President Vladimir Putin, France also increased the level of combat readiness of its SSBMs. The number of boats on combat patrol has been increased from one to three. The last time this happened was in the 1980s during the Euromissile crisis³⁰. In fact, this means that



Francois Mitterrand,
the 21st President of
France (1981 – 1995)

Source: www.krugosvet.ru

²⁷ Livre blanc sur la défense et la sécurité nationale 2008 // Ministère des Armées. P. 109. URL: <https://www.vie-publique.fr/sites/default/files/rapport/pdf/084000341.pdf>

²⁸ Ibid., p. 110.

²⁹ Obichkina E.O. Emmanuel Macron’s Foreign Policy: the Search for a Geopolitical strategy in a disordered world hierarchy // Actual problems of Europe. 2021. No. 3 (111). P. 255.

³⁰ France put three nuclear missile submarines into the sea at once // Moskovsky Komsomolets. 24 March 2022. URL: <https://www.mk.ru/politics/2022/03/24/>



for the first time since the 1980s such an escalation has become possible between France and Russia. However, we must pay tribute, in order to reduce nuclear risks, E. Macron in November 2022 said that France would not respond with a nuclear strike in the event of a nuclear strike “on Ukraine or on the region”, since such an attack would not affect its *fundamental interests*. At the same time, the president added that Russia will have a “historical responsibility for making such a decision”³¹.

Another factor calling into question the independence of the French nuclear weapons is the obvious choice of the current French leadership in favor of the *européanization* of its own sovereignty, the convergence of national interests with pan-European ones. As E. Obichkina writes: “Despite the fact that the president made sovereignty one of the main pillars of his geopolitical strategy, he secured the change in both the geographical framework and the content of this concept. The new European interpretation differs primarily in that it restricts state sovereignty, subordinating it to the absolute priority of human rights, including the privilege of the external players to protect foreign individuals from the encroachments of the state, to which the classical interpretation grants the exclusive right to violence within its borders. In addition, it expands the geographical boundaries of the exercise of sovereignty, breaking with the Gaullist model of the integration association of nation-states, which at one time made France an opponent of the EU’s federalization plans”³². This point of view is also true in a narrower military context. As Russian military experts note, “France’s security is based in the long term on the modernization and Europeanization of its own defense tools and on the possibility of further using nuclear deterrence”³³. So far, France is trying to *européanize* its defense and certain elements of deterrence by implementing bilateral or multilateral projects with other Western European countries. At the end of the 2000s, there was also discussion about conducting joint combat patrols of nuclear submarines of France and Great Britain. Thus, one of the patriarchs of French nuclear policy, F. Heisbourg believes that the idea of joint patrolling would be untenable, since it allows for the possibility of transferring the authority to launch nuclear missiles to another state. The same applies to the idea of *européanization* of French defense: “The war in Libya was a small and winning operation that received a UN mandate, but half of the EU and NATO states condemned it. This showed the limits and insufficient idea of *européanization* of defense”.

franciya-vyvela-v-more-srazu-tri-atomnye-raketnye-podvodnye-lodki.html

³¹ Guerre en Ukraine: la France ne ripostera pas par l’arme nucléaire à une attaque nucléaire tactique de Vladimir Poutine en Ukraine // La Depeche. fr. URL: <https://www.ladepeche.fr/2022/10/12/guerre-en-ukraine-la-france-ne-ripostera-pas-par-larme-nucleaire-a-une-attaque-nucleaire-tactique-de-poutine-en-ukraine-10731982.php>

³² Obichkina E. Emmanuel Macron’s Foreign Policy: the Search for a Geopolitical strategy in a disordered world hierarchy // Actual problems of Europe. 2021. No. 3 (111). P. 249.

³³ Nuclear Weapons after the Cold War / Ed. by A. Arbatov, V. Dvorkin; Carnegie Moscow Center. M.: Russian Political Encyclopedia (ROSSPEN), 2006. P. 74.

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Nevertheless, in the current crisis, it must be assumed that French defense policy will go precisely in the direction of *europeanization*. And in this case, the conclusion for Russia is rather disappointing: the French nuclear arsenal today is designed to serve pan-European, rather than national interests in the De Gaulle sense. And in the context of the current consolidation of the EU around NATO, it is actually an integral element of North Atlantic deterrence.

Therefore, Russia, of course, should take into account the French and British arsenals as part of NATO's collective deterrent forces, as stated by the Russian President in an address to the Federation Council on February 21, 2023: "In its collective statement, NATO in fact has actually showed its will to become a party to the Strategic Arms Reduction Treaty. We agree with this, go on. Moreover, we believe that such a statement of the issue is long overdue, because NATO, let me remind you, consists of more than one nuclear power – the UK and France also have nuclear arsenals, they are improving, developing and are also directed against us – they are also directed against Russia. The latest statements of their leaders only confirm this.

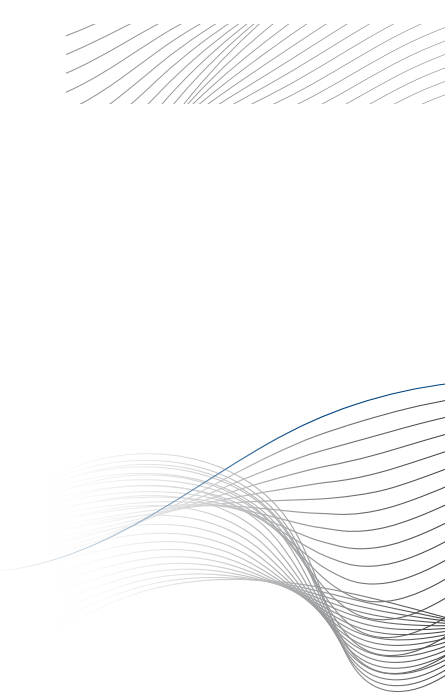
We simply cannot ignore this, we have no right, especially today, as well as the fact that the first Strategic Offensive Arms Treaty was originally concluded by the Soviet Union and the United States in 1991 in a fundamentally different situation: in terms of reducing tension and strengthening mutual trust"³⁴. Meanwhile, the reaction of the French Foreign Ministry to the Russian withdrawal from the New START completely ignored this call of the President of Russia"³⁵. However, there has been a remarkable shift in this position that leaves some room for hope. In June 2023, at GLOBSEC Conference in Bratislava E. Macron said: «In 2019, we Europeans discovered a treaty that covered us against missiles that landed on our soil, and that Russian non-compliance and the US decision could leave us exposed and somehow naked, because we were not a party to it. The same thing happened when Russia methodically suspended implementation of the New Start Treaty last February, then clearly violated the NATO-Russia Founding Act in March, etc.

I say this very clearly, we Europeans must be active players of these treaties that cover our security and build the future framework. If we delegate our role to others, Russia, the United States or I don't know who, we will never be credible players. And therefore, yes, we must build these diplomatic solutions for the future»³⁶. This declaration, lamentably, didn't get any reaction in the French

³⁴ President's Message to the Federal Assembly // Website of the President of Russia. 21 February 2023. URL: <http://www.kremlin.ru/events/president/news/70565>

³⁵ New START – Annonce par la Russie de la suspension de sa participation au traité (21 février 2023) // Site du Ministère de l'Europe et des Affaires étrangères de la France. URL: <https://www.diplomatie.gouv.fr/ru/politique-etrangere/securite-desarmement-et-non-proliferation/actualites-et-evenements-lies-a-la-defense-et-la-securite/article/new-start-annonce-par-la-russie-de-la-suspension-de-sa-participation-au-traite>

³⁶ Globsec Summit in Bratislava. Speech by E. Macron // Elysee. 1 June 2023. URL: <https://www.elysee.fr/en/emmanuel-macron/2023/06/01/globsec-summit-in-bratislava>



The task of preventing the *atlanticization* of the EU, which France set when returning to the NATO military organization, has not been fulfilled. On the contrary, France's rapprochement with NATO had the opposite effect – the *atlanticization* of French foreign policy



expert field. It also remains unclear, whether the President will be able to materialize his proposal and, more importantly, to convince the conservative and pro-Atlantic French military leadership in his rightness. So far, it is clear that France will not start, nor join such a dialogue until the end of the war in Ukraine since there has been also another major shift in the French Atlantic policy: an opt for being a loyal and credible ally rather than an equidistant mediator.

Meanwhile, the question remains relevant – how to implement multilateral disarmament practically?

Unfortunately, so far, no mutually acceptable approaches to multilateral disarmament have been found. Nevertheless, most experts agree that the beginning of this process should be the adoption of measures to increase transparency – for example, the exchange of data on the number, composition, deployment of nuclear forces. According to the British researcher J. Acton, “the exchange of information could be carried out publicly, or, more likely, confidentially. To begin with, France and the United Kingdom could provide information that is not particularly sensitive, for example, about the total number of delivery vehicles and warheads (they have already made public a significant part of this information). Over time, they would reveal more detailed data – about the number of deployed and non-deployed systems, their types and locations. Ultimately, we may even talk about the number of warheads on each missile (which Russia and the United States exchange during inspections under the New START Treaty)”³⁷.

As for nuclear disarmament scenarios, Russian experts offer several options:

1. Negotiations on the limitation/elimination of TNW. It is known, that it was the United States who initially called for such negotiations. Russia refused this initiative until the American TNW were withdrawn from Europe. However, it seems that negotiations on this type of weapons could develop into a multilateral format, given that the French air-launched cruise missiles belong to pre-strategic weapons in the American and Russian classifications.

The complexity of this approach lies in the fact that the abolition of TNW is extremely difficult from the point of view of verification³⁸. In addition, preliminary work will be required on the part of the United States and Russia to develop a unified definition of TNW, as well as the rules of mutual offset.

2. Lowering the level of combat readiness of part of the warheads of the United States and Russia and abandoning the concept of a retaliatory strike. The idea is to keep on high alert the number of warheads comparable to the total number of warheads of third countries, primarily France and the UK. However, this idea does not take into account the fact that the nuclear weapons of France and

³⁷ Polycentric nuclear world: Challenges and new opportunities / Ed. by A. Arbatov, V. Dvorkin; Carnegie Moscow Center. M.: Political Encyclopedia, 2017. – 222 p.

³⁸ Ibid.

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Great Britain are directed at Russia. Therefore, it would be more logical to have an equal number of warheads on high alert between the US, France and Great Britain on the one hand and Russia on the other hand. China could also be involved in such negotiations, although this would require transparency regarding the number of Chinese warheads, which seems very difficult to achieve.

3. The proposal to eliminate an entire class of weapons – ICBMs as a means of delivering the first nuclear strike seems interesting³⁹. This class of weapons is chosen as a common divider for the United States, Russia and China. It seems that the reduction of this type of weapons will increase the level of confidence of other States and will allow discussion on other types of weapons to begin. The obvious drawback of this concept is that ICBMs form the basis of the Russian Strategic Nuclear Forces. This means that such reductions will violate parity between Russia and the United States, which may create an obstacle to further progress towards the goal of general and complete disarmament.

4. Finally, some Russian researchers note that the most realistic format for multilateral disarmament is the format of trilateral forums: Great Britain, France and Russia; the United States, Russia and China. And in this case, the task of Moscow and Washington will be to coordinate these dialogues⁴⁰.

A significant disadvantage is that in France and the UK, as many, including French researchers, note, there is practically no discussion on ways to multilateral disarmament at either the governmental or expert levels. At the same time, if such negotiations ever begin, the adoption of agreements on specific measures will be preceded by long negotiations on terminology, rules of offset, monitoring, etc., since the accumulated Russian-American experience, alas, is not universal. Therefore, it is so important that work in this direction is already underway, and that all the countries of the nuclear five are involved in the process of discussing the problem of multilateral disarmament, at least at the expert level.

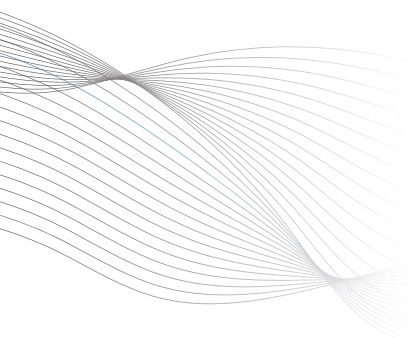
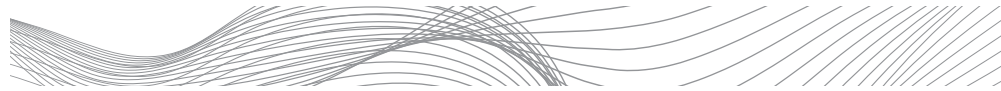


Emmanuel Macron, the
25th President of France
(2017-present), in the
SSBN *Le Terrible*
(*Triomphant* class), 2017

Source: www.bbc.co.uk

³⁹ On a multilateral approach to the problem of nuclear disarmament. № IX. / A.G. Save-lyev et al.; I.S. Ivanov (ed.). M.: Special Book, 2013. 32 p.

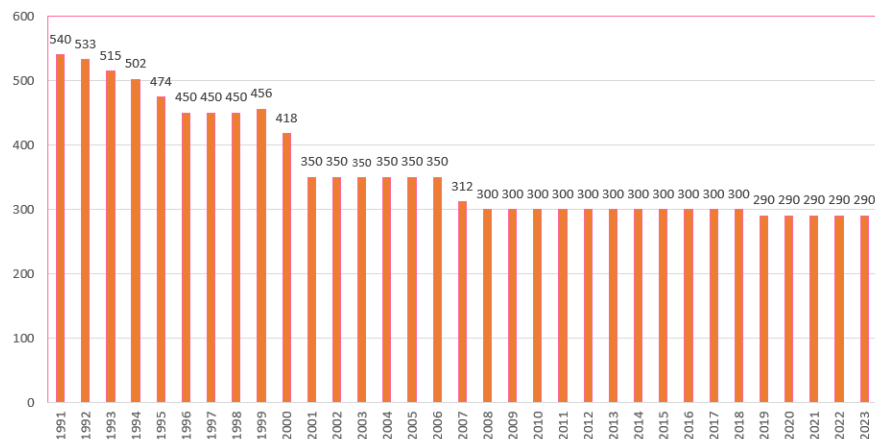
⁴⁰ Polycentric nuclear world: challenges and new opportunities.



CHAPTER 2. THE MODERNIZATION PLAN OF THE FRENCH NUCLEAR WEAPONS IN THE FACE OF EVOLVING TERRITORIAL AND TECHNOLOGICAL THREATS: COMPLIANCE OF EXISTING WEAPONS SYSTEMS AND DOCTRINE

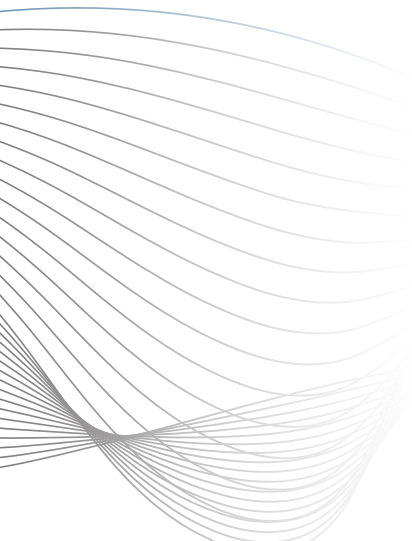
2.1 Composition of France’s nuclear arsenal

As of 2021, according to SIPRI estimates, France had 290 warheads, of which 280 were deployed. France has been observing the ceiling of 300 nuclear warheads since 2008, when the corresponding decision was made by French President Nicolas Sarkozy. In 2007, France had 348 warheads⁴¹. The peak was in 1991-1992 – 548 warheads.



Number of France’s nuclear warheads (1991-2023)

Source: compiled by author



In the near future, of course, we can hardly expect a reduction in the French nuclear arsenal. F. Hollande stated it in 2015: “France has been a model in terms of its nuclear weapons reserves - 300 units. Why 300? Because it corresponds to our assessment of the strategic context. If the level of other arsenals, especially Russian and American, one day dropped to several hundred, it would also have consequences for the French arsenal. But today we are still far from that”⁴². At the same time, even the French themselves note that the discussion on this issue is closed, and issues related to nuclear policy are not brought up for open discussion, unlike most other issues of domestic and foreign policy.

In addition to the Russian-American superiority, F. Hollande, and then E. Macron, noted a number of other reasons why the French

⁴¹ Kristensen H., Korda M. French nuclear forces // Bulletin of the Atomic Scientists. 2019. P. 51-55. URL: <https://www.tandfonline.com/doi/pdf/10.1080/00963402.2019.1556003?needAccess=true>

⁴² Déclaration de M. François Hollande, Président de la République, sur la dissuasion nucléaire, à Istres // Vie publique. 19 Février 2015. URL: <https://www.vie-publique.fr/discours/193954-declaration-de-m-francois-hollande-president-de-la-republique-sur-la>

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nuclear arsenal should remain within the same limits and undergo constant modernization. F. Hollande spoke about the possibility of new states with nuclear weapons (Iran) appearing on the map, about attempts by the DPRK to undermine strategic stability, about the Ukrainian crisis, the use of chemical weapons in Syria. E. Macron singled out among the main threats the crisis of multipolarity and “the rule of force over the norms of international law”, the US-Chinese rivalry, which will “henceforth determine international relations”, the crisis of the collective security system in Europe, technological progress. All this unites the concept of a *strategic context*, which, according to Paris, is not yet favorable enough to take further steps in disarmament. It is quite clear that in this way France is trying to justify its unwillingness to take concrete steps in the field of nuclear disarmament.

The French arsenal consists of an air and sea component. The ground-based missile forces were finally disbanded in 1998. The main component is considered to be the marine component. It annually spends about 90% of the entire budget allocated to the country’s nuclear forces⁴³. The ratio within the dyad is approximately 80 to 20, where 80% are sea-based forces, and 20% are air-based⁴⁴. It is believed that it would be more effective to use a marine component to deliver a massive blow, because it is less vulnerable and more powerful, since one SSBN carries more warheads than one bomber, and the range of the SLBM flight significantly exceeds the range of cruise missiles. On the contrary, for a *point strike* or a *last warning* it would be more expedient to use an air component, since it has greater accuracy and maneuverability. As the Minister of Defense le Drian said in 2014, “the accuracy of the air component makes it possible to “effectively destroy all the centers of power [of a regional power] with very limited collateral damage, unlike sea-based strategic nuclear forces, which does not have the same accuracy”⁴⁵.



A significant disadvantage is that in France and the UK, as many, including French researchers, note, there is practically no discussion on ways to multilateral disarmament at either the governmental or expert levels

⁴³ Center for Arms Control and Non-Proliferation, Factsheet du 17 oct. 2016.

⁴⁴ SIPRI YEARBOOK 2021: Armaments, Disarmament and International Security // Stockholm International Peace Research Institute, 2021. URL: <http://www.jstor.org/stable/resrep34859>

⁴⁵ Tertrais, B. French Nuclear Deterrence Policy, Forces, And Future: A Handbook // Fondation pour la recherche stratégique. 2017. P. 59. URL: <https://www.frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2020/202004.pdf>



France's nuclear arsenal, 2021⁴⁶

Platforms	Number	Max. number of deployed missiles	Year of entrance into service	Max. Speed	Flight range/ autonomous navigation
SSBNs <i>Le Triomphant</i>	4	Up to 16 missiles	2017	25 knots 46,3 km/h	6000 km
Ground-based bombers Rafale BF3	40	1 missile	2010-2011	Mach 1,8	Up to 17000 km (with refueling in the air) ⁴⁷
Ship-based bombers Rafale MF3	10	1 missile	2010-2011	Mach 1,8	Up to 17000 km (with refueling in the air)

Delivery systems	Number	Max. number of deployed warheads	Year of entrance into service	Flight range	Circular probable deviation
SLBM M51.2	60	6 warheads	2010	9000 km	150-200 m
Cruise missile ASMP-A	50	1 warhead	2009	500 km	Less than 10 m

Warheads	Number	Capacity
TNO (for SLBMs)	240	100-150 ktn
TN-80 or 81 (for cruise missiles)	50	Up to 300 ktn

The naval component of the Strategic Nuclear Forces consists of four submarines of the *Triomphant* type, each of which has its own name – *Le Triomphant*, *Le Temeraire*, *Le Vigilant* and *Le Terrible* – and is capable of carrying up to 16 SLBMs in addition to conventional weapons – F17 torpedoes and Exocet SM39 anti-ship missiles. According to B. Tertrais, the striking power of two submarines is sufficient to inflict *irreparable damage* to the enemy (therefore, two

⁴⁶ SIPRI YEARBOOK 2021: Armaments, Disarmament and International Security // Stockholm International Peace Research Institute, 2021. URL: <http://www.jstor.org/stable/resrep34859>

⁴⁷ The record set in 2021, see Rafale Fighters spend Record Time In The Air; Fly 17,000 km en Route To Tahiti // The Eurasian Times. URL: <https://eurasianimes.com/rafale-fighter-jets-spend-record-time-in-the-air-fly-17000-km-while-en-route-to-tahiti/>

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boats, two more – guarantee the possibility of a *minimal* retaliatory strike⁴⁸. At the same time, one of the four boats is always under maintenance at the naval base in Brest. The other three are on alert: at least one SSBNs is on combat patrol, lasting up to 70 days, the second is preparing for patrol, the third is heading to the port after patrol. Accordingly, the number of SLBMs is designed for 3 SSBNS, not 4, and is 48 units. The location of the submarines – Île Longue – has been ensuring the combat readiness of the SSBNs for 52 years. There are two dry docks, a storage facility for nuclear warheads⁴⁹.

The *Triumphant* SSBN is larger, faster and twice quieter than its predecessor, the *Redoubtable* (the noise level of the *Triumphant* is equal to the ambient noise level of the sea at full calm). *Triumphant* operates on a K-15 water-water type nuclear reactor with a capacity of 150 MW. Unlike American and British submarines, the fuel for this reactor is LEU, the degree of enrichment of which is 7-20%. The same reactor is installed on the aircraft carrier *Charles de Gaulle*. The boats use the DMUX-80 sonar system, which includes bow and side sonars, which presumably have a detection range of 200 km⁵⁰.

The *Triumphant* is equipped with M 51.2 missiles (48 units), which in 2021 completely replaced the M 51.1 version. They are capable of carrying up to six TNO warheads (*Tête Nucléaire Océanique* - marine nuclear warhead) with a capacity of 100 ktn. The approximate flight range of the M51.2 is up to 9,000 km, so it can already be called an intercontinental missile in any case. As B. Tertrais writes, the M51.2 is a *real deterrent tool* in all azimuths". With a speed of up to 20 Mach, it could reach the far corners of Asia in about thirty minutes⁵¹. M 51.3 and M 51.4 are currently being developed, the technical characteristics of which are not yet known but they are actively being tested by the France. The last test of M 51 SLBN was in April 2023 and was proclaimed successful by the Ministry of Armed Forces⁵². The new M 51.3 type is planned to be introduced by 2025. In parallel, the new generation of TNO warheads are being developed.



Flight range of the French SLBM M 51.2.

Source: compiled by author

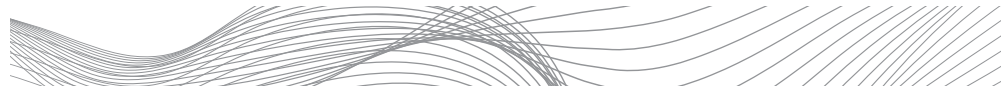
⁴⁸ Tertrais B. French Nuclear Deterrence Policy, Forces, And Future: A Handbook // Recherches & Documents. 2020. N° 4. P. 56. URL: <https://www.frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2020/202004.pdf>

⁴⁹ Kristensen H., Korda M. French nuclear forces // Bulletin of the Atomic Scientists. 2019. P. 51-55. URL: <https://www.tandfonline.com/doi/pdf/10.1080/00963402.2019.1556003?needAccess=true>

⁵⁰ Classe Le *Triumphant* // Encyclopedie des armes. URL: <https://encyclopedie-des-armes.com/index.php/sous-marins/sous-marins-nucleaires-lanceurs-d-engins/1170-classe-le-triomphant>

⁵¹ Tertrais, B. French Nuclear Deterrence Policy, Forces, And Future: A Handbook // Fondation pour la recherche stratégique. 2017. P. 56. URL: <https://www.frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2020/202004.pdf>

⁵² Le système d'armes du SNLE Le Terrible / M51 validé en conditions opérationnelles // Le site du ministère des Armées. URL: <https://www.defense.gouv.fr/dga/actualites/systeme-darmes-du-snle-terrible-m51-valide-conditions-operationnelles>



SSBN *Le Terrible* – one of four French nuclear submarines

Source: www.bfmtv.com

As for the air component of the Strategic Nuclear Forces, it includes 40 ground-based *Rafale* BF3 fighters and 10 ship-based *Rafale* MF3 fighters capable of carrying one TN-80 or TN-81 charge (which is lighter and safer than TN-80) with a capacity of up to 300 ktn. As an anonymous source noted, the technical characteristics of ship-based and land-based *Rafales* do not differ⁵³. The *Rafales* finally replaced their predecessors, the *Mirage* 2000, in 2018. They have 2.5 times longer flight range (3,700 km versus 1,500 km), a flight speed of Mach 2.2 (instead of 1.8 for *Mirages*). The base of the BF3 aircraft is located in Saint-Dizier, MF3 – in Landivisio. But, as the Russian military expert Major General M. Vildanov writes, “the MF3 sea-based aircraft, with the French president’s decision to use nuclear weapons and receiving a combat order, are transferred to the operational subordination of the command of surface forces and relocated to the aircraft carrier *Charles de Gaulle*, ensuring the defeat of enemy objects with cruise missiles at a distance of up to 1000 km from the area location of the aircraft carrier”⁵⁴. Home port of the aircraft carrier *Charles de Gaulle* is Toulon.

French *Rafale* bombers are equipped with ASMP-A cruise missiles, which replaced ASMP in 2009-2011. The launch range is 500 km, the speed is Mach 3. It is known that the ASN4G missile is already being developed, which will have to replace the ASMP-A by 2035 and whose speed will be from Mach 4 to 9.

2.1.1 Missile defense system

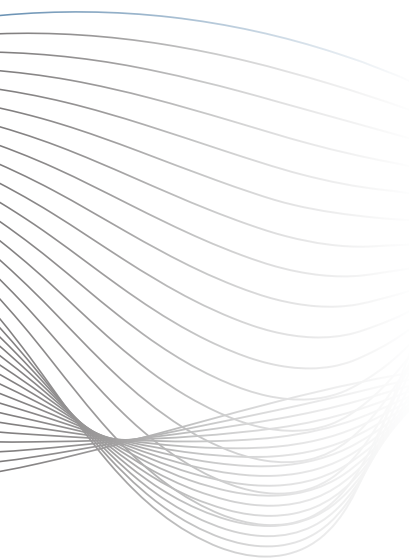
Interestingly, for a long time France did not want to develop its own missile defense, considering it too expensive and fearing that it would call into question the *legitimacy* of the right of a preventive strike, which is set forth in the French doctrine. In addition, as an anonymous source told the author, “France has always held the view that nuclear deterrence can be effective only with a certain degree of *vulnerability* to the enemy. That is, the mutual refusal of countries to develop missile defense makes deterrence more effective. That is why France was against the US withdrawal from the ABM treaty in 2001”⁵⁵.

Today, the French missile defense system is not capable of intercepting ICBMs, only medium- and short-range missiles. Thus, the threat of an ICBM strike is automatically considered as one of the possible triggers for the *last warning*. Based on this, it can be concluded that the French nuclear weapons still have a potential

⁵³ Interview with the author. 3 June 2022.

⁵⁴ Vildanov M. Strategic nuclear forces of France: state and prospects of development. 2018. URL: http://factmil.com/publ/strana/francija/strategicheskie_jadernye_sily_francii_sostojanie_i_perspektivy_razvitiya_2018/33-1-0-1511

⁵⁵ Interview with the author. 3 June 2022.



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goal: the only ICBMs that can reach French territory and pose an immediate threat to France are Russian missiles. This point of view is shared by military experts: as writes A. Arbatov, “without a doubt, the British and French nuclear forces are designed to deter Russia and are aimed at its territory”⁵⁶.

To date, a theater of operations air defense system has been created (in partnership with Italy) and allows intercepting short-range ballistic missiles, cruise missiles and aircraft. The SAMP/T system (medium-range surface-to-air system), also called *Mamba*, is equipped with caterpillar-powered Aster anti-missiles. In addition to SAMP-T surface-to-air systems (SAMs), there are also ship-based SAAM SAMs (PAAMS) for equipping ships of the French and Italian Navies. Aster anti-missiles are also installed on them. SAMP SAM has a high rate of fire (8 missiles in 10 seconds) and a minimum response time; each battery can simultaneously aim 16 missiles at various targets. The range of Aster anti-missile is 3-100 km for aircraft, 3-25 km for ballistic missiles.

However, according to experts, “none of the European systems is capable of countering the threats of a new generation coming from Russia and China, including hypersonic gliding blocks, hypersonic and supersonic cruise missiles and maneuverable combat aircraft of a new generation”⁵⁷. Therefore, France, like other European states, rather relies on missile defense systems in Romania, deployed by the US after 2008. At the same time, France was one of a few EU member states that opposed the US plans to create a European ABM system. France insisted that decisions on the combat use of missile defense systems should be made by all NATO members, and not by the United States alone, to which Washington refused. Instead, Paris aims to implement the *Twister* project, or a Timely Warning and Interception System using a space surveillance system for the theater of operations. Finland, Italy, the Netherlands and Spain are participating in this international project led by France. The project is intended to be a response to new challenges, including medium-range guided ballistic missiles, super- and hypersonic cruise missiles, hypersonic gliding blocks. This system should become a contribution of European powers to the defense of NATO, and at the same time be more independent from the United States.

French *Rafale* bombers are equipped with ASMP-A cruise missiles, which replaced ASMP in 2009-2011. The launch range is 500 km, the speed is Mach 3. It is known that the ASN4G rocket is already being developed, which will have to replace the ASMP-A by 2035 and whose speed will be from Mach 4 to 9.

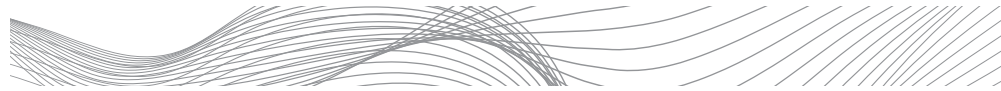


The sea-based aircraft *Rafale M*

Source: www.outrunchange.com

⁵⁶ Arbatov, A. The ‘P5’ process: prospects for enhancement // Deep Cuts. January 2015. URL: https://www.files.ethz.ch/isn/192448/DeepCuts_WP3_Arbatov_UK.pdf

⁵⁷ Havoc, G. The Timely Warning and Interception with Space-based Theater Surveillance (Twister). 17.10.2020. URL: <https://www.secretprojects.co.uk/threads/the-timely-warning-and-interception-with-space-based-theater-surveillance-twister.32908/>



Charles de Gaulle
aircraft carrier

Source: www.modernweapon.ru

2.1.2 Missile Attack Warning system

As for the Missile Attack Warning System, “optical and electronic strategic satellite reconnaissance facilities are being developed” in France. As part of the SPIRALE pilot project, two microsattellites (SPIRALE-A and SPIRALE-B) equipped with infrared radiation sensors were deployed in geostationary orbit in 2009. Thanks to them, SPIRALE is able to detect ballistic missiles immediately after launch at the stage of their acceleration. An important advantage of SPIRALE is their compactness. The satellites transmit data to the Air Operations Center of the French Air Force and Space Forces, which is located in Mont Verdun and which also transmits data to the NATO Joint Air Operations Center in Udem, Germany. In addition, France also has satellites Syracuse-3A (launched in 2005), Syracuse-3B (launched in 2006), SICRAL-2 (launched in 2015 jointly with Italy). In 2018, the French Ministry of Defense announced the development of three Syracuse-4 satellites. Also, France is working on the creation of space weapons, in particular laser ones⁵⁸. At the same time, as a NATO member, France has the right to request information from satellites of NATO member states.

The new generation GM 406 radars (introduced in 2022) are located in Mont Verdun, Mont Agel and in French Guiana.

All this in the future “will allow the creation of a space echelon of the missile attack warning system, which may become the most important component of the continent’s missile defense”⁵⁹.

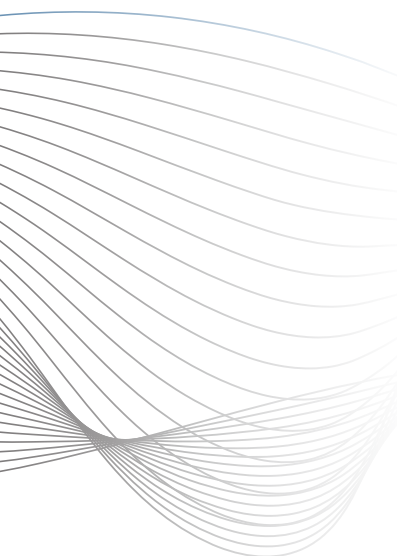
In general, the modernization of the French strategic nuclear Forces at this stage pursues two goals. Firstly, to reduce the degree of detection of SSBNs and aircrafts, and secondly, to increase their effectiveness against modern missile defense systems⁶⁰. According to French experts, if no updates are made, then by 2035 “technological progress will cast doubt on the credibility of nuclear weapons.” As R. Lechable writes, “the ASMP-A missile will be able to overcome any missile defense until 2035. But further, a technological breakthrough may limit the effectiveness of delivery vehicles. Thus, this evolution, which will affect both the maritime and the air component, will pose a threat to the future of the French potential”. The same priorities were set in F. Hollande’s speech in 2015: “a potential aggressor using blackmail against France should know for sure that the deterrent forces are on alert and that he will not be able to detect or destroy them”⁶¹. B. Tertrais also identifies three tasks for the modernization

⁵⁸ Poncet, G. Espace: la France va armer ses prochains satellites militaires // Le Point. 25 Juillet 2019. URL: https://www.lepoint.fr/societe/espace-la-france-va-armer-ses-prochains-satellites-militaires-25-07-2019-2326872_23.php

⁵⁹ Nuclear Weapons after the Cold War / Ed. by A. Arbatov, V. Dvorkin; Carnegie Moscow Center. M.: Russian Political Encyclopedia (ROSSPEN). 2006. P. 81.

⁶⁰ Brustlein C. France’s Nuclear Arsenal: What Sort of Renewal? // Politique étrangère N°3. 2017. URL: https://www.cairn-int.info/article-E_PE_173_0113--france-s-nuclear-arsenal-what-sort.htm

⁶¹ Déclaration de M. François Hollande, Président de la République, sur la dissuasion nucléaire, à Istres // Vie publique. 19 Février 2015. URL: <https://www.vie-publique.fr/>



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of the French strategic nuclear forces:

1. Creation of *followers* of the M51.2 (M51.3, M51.4) and ASMP-A (ASN4G) warheads to increase the effectiveness of overcoming missile defense.

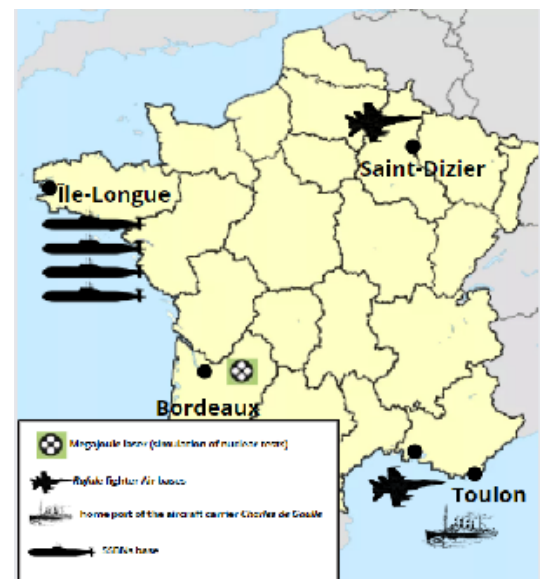
2. “Design and construction of third-generation SSBNs”, which, according to tonnage, “following the logic of strict *sufficiency* and *low cost*, will be close to current submarines (besides, they will carry a missile-follower of the M51).

3. “Design of new nuclear warheads after the expiration of the current ones, i.e. until 2040.” By 2025, it is planned to replace the M 51.2 SLBM with M 51.3, as well as replace the warhead for the TNO-1 SLBM with TNO-2. In 2033, the renewal of the fleet of submarines should also begin: the first is planned to replace the *Triomphant* with the “third generation of SSBNs” – SN3G.

As can be seen, *Rafale* fighters *do not participate* in the modernization of nuclear weapons. It is believed that the fighters do not need to be updated yet. As R. Leschable writes, “in 2014, the first nuclear squadron of *Rafales* was able to reach about Reunion from Haute-Marne in less than 11 hours. Therefore, even before the commissioning of the multi-purpose tanker (Multi Role Tanker Transport), the air component of the Strategic Nuclear Forces has confirmed its effectiveness.” Indeed, the air force modernization program includes, in addition to the modernization of cruise missiles and warheads, the adoption of the *Phoenix* tanker aircraft, which should provide a longer duration of the *Rafale* flight.

In addition, as already mentioned, for Paris, the renewal of the nuclear arsenal is closely linked to the goal of increasing the defense capability of the entire EU. As the authors of the monograph “Nuclear Weapons after the Cold War” write, “France’s security is based in the long term on the modernization and Europeanization of its own defense tools and on the possibility of further using nuclear deterrence”⁶². So, in 2019, Germany and France signed an agreement on the creation of FCAS (Future Combat Air System) – an air defense system. Later, Spain joined it. As the Minister of Defense F. Parly said, “France, Germany and Spain are creating one of the most important instruments of their sovereignty and the sovereignty of Europe in the 21st century.” It is already planned that the ASN4G missiles, which should replace the ASMP-A, will be compatible with the *Burst*, *Fighter* aircrafts, which are being created in cooperation with Germany and Spain under the FCAS program (Future Combat Air System) – “air combat systems of the future”⁶³.

This project assumes that the three countries will be able to con-



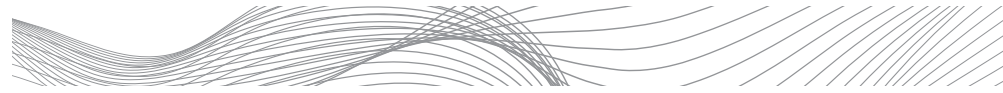
Map of French nuclear weapons deployment

Source: designed by the author

discours/193954-declaration-de-m-francois-hollande-president-de-la-republique-sur-la

⁶² Nuclear Weapons after the Cold War / Ed. by A. Arbatov, V. Dvorkin; Carnegie Moscow Center. M.: Russian Political Encyclopedia (ROSSPEN). 2006. P. 74.

⁶³ 2040, l'odyssée du SCAF - Le système de combat aérien du futur // Sénat de la République de France. URL: <http://www.senat.fr/rap/r19-642-2/r19-642-26.html>



For a long time France did not want to develop its own missile defense, considering it too expensive and fearing that it would call into question the *legitimacy* of the right of a preventive strike, which is set forth in the French doctrine

duct joint exercises and operations thanks to the combat-cloud system being developed – a “decentralized, cyber-resistant, joint information network in air, land, sea, space and cyberspace using cloud technologies.” The system connects nodes in domains, providing intelligence and data exchange in real time. A multi-domain combat cloud increases efficiency by providing the right information in the right place and at the right time,” says the website of one of the developers of the Airbus program⁶⁴.

In addition, as C. Brustlein notes, “in fact, maintaining the reliability of nuclear forces goes beyond these two operational components (*naval and air forces* – A. Z.). It involves the further development of the simulation program by the Commissariat for Nuclear Energy and its various tools (including supercomputers, *Megajoule* laser and X-ray equipment), which are aimed at ensuring the reliability and safety of the two existing types of warheads (TNA and TNO) throughout their service life while preparing replacements for commissioning by about 2030-2035.”

The named equipment is used to simulate nuclear tests. In 1996, France completed its nuclear tests program and joined the CTBT. Now nuclear tests are simulated using TERA-1000 supercomputers with a computing power of 25 petaflops, the *Airix* and *Epure* systems, as well as the *Megajoule* laser (LMJ). The simulation consists of three stages. The first is the development of physical models and obtaining a system of mathematical equations that reproduce the work of nuclear weapons as accurately as possible: how materials change under pressure, what is the temperature and the rate of deformation, etc. To verify these data, physical experiments are carried out at such sites as the European Synchrotron Radiation Center, the National Heavy Ion Accelerator GANIL, etc. After creating a mathematical model, the second stage begins – *digital modeling* – a system of equations with a large number of unknowns is calculated on TERA-1000 supercomputers. The third stage involves modeling the *behavior* of physical materials in the period before and during the chain reaction. The *non-nuclear* phase is reproduced on the Erix and Plot machines, the nuclear phase is reproduced on the *Megajoule* laser, which was put into operation in 2014. According to the director of the Nuclear Weapons Department of the French Atomic Energy Commissariat, F. Zheleznikov, the use of a laser allows “to simulate the explosion of a thermonuclear bomb, producing fusion reactions on a very small scale, only a few millimeters”⁶⁵. The nuclear installation unit includes four compartments (two on each side) that lead to the core with a tablet containing deuterium-tritium thermonuclear fuel. Laser beams are used to heat the *core*, which in turn emits X-rays (indirect drive technology) and heats the tablet with fuel. La-

⁶⁴ Multi-Domain Combat Cloud // Airbus. URL: <https://www.airbus.com/en/products-services/defence/multi-domain-superiority/multi-domain-combat-cloud>

⁶⁵ Mennessier, M. Le Laser Mégajoule va simuler l'arme nucléaire // Le Figaro. 15 Novembre 2010. URL: <https://www.lefigaro.fr/sciences/2010/10/14/01008-20101014ARTFIG00757-le-laser-megajoule-va-simuler-l-arme-nucleaire.php>

ser technology allows the tablet to be heated up to 100,000,000 ° C, which is necessary to overcome the Coulomb barrier (the barrier that positively charged atomic nuclei need to overcome to fuse and release energy) and perform a thermonuclear reaction.

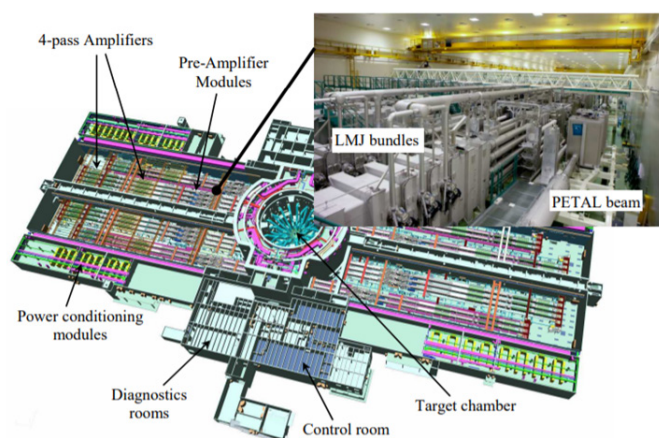
Plans to modernize nuclear weapons are significantly limited by the budget. Currently, spending on nuclear weapons accounts for 20% of the country's total defense budget. Its maintenance and modernization annually cost France 5 billion euros (2019-2023), which is 1 billion more than in the previous five-year plan (3.8 billion euros for 2014-2019). The main difficulty is to carry out sufficient modernization of nuclear weapons without detriment to conventional ones. We must not forget that, according to the French doctrine, deterrence should be provided not only by nuclear, but also by conventional weapons. So, French *Rafales* can be armed with conventional missiles and it is in this capacity that they participate in military exercises, military operations that France, for example, conducts in Africa. And if one of the components is not sufficiently developed, it may limit the freedom of action of Paris, make the concept of *containment* more vulnerable. According to C. Brustlein, it would be more optimal to increase the budget for the modernization of nuclear weapons to "6 billion euros by the mid-2020s, which corresponds to an average annual increase of 300 million euros until 2025 with a gradual decrease after that"⁶⁶. At the same time, plans to upgrade the nuclear deterrent component should go hand in hand with plans to upgrade conventional weapons (replacement or modernization of an outdated fleet, recruitment, replacement of equipment, staff training, etc.).

2.2 Research centers

France has a developed network of research centers, which are units of the Commissariat for Atomic and Alternative Energy (CEA), which was established in 1945 by Charles de Gaulle and played a key role in the creation of the French atomic bomb. Today, the CEA units serve both the peaceful nuclear power industry of the country and its nuclear program.

The Commissariat's activities are concentrated in six areas: national defense and security, nuclear and renewable energy, biotechnology and medical research, technological research for industry, basic research, as well as the processing of spent nuclear fuel and the dismantling of nuclear facilities.

Nine research centers, more than 20,000 employees are involved



Internal structure of the
Megajoule laser

Source: www.cyberleninka.org

⁶⁶ Brustlein, C. France's Nuclear Arsenal: What Sort of Renewal? // *Politique étrangère*. 2017. N° 3. URL: https://www.cairn-int.info/article-E_PE_173_0113--france-s-nuclear-arsenal-what-sort.htm



in the work of the Commissariat, the annual budget is about 5 billion euros⁶⁷.

Civilian research centers are located in Saclay, Grenoble, Valrault, Cadarache, Marcoule.

Military research centers include:

- The DAM-Ile-de-France Center, or the Military Affairs Department of the Commissariat (40 km from Paris), is engaged in modeling warheads, provides recommendations to the authorities on combating terrorism and the proliferation of nuclear weapons, warns the authorities in the event of nuclear tests by other states, cooperates with the IT company Atos in the development of supercomputers.

- The Cadarache Center (Saint-Paul-le-Durance commune) is engaged in research in the field of nuclear fusion and fission, as well as dismantling and sanitation of nuclear installations, nuclear safety. Nuclear engines for French SSBMS are produced here. It has several well-known research facilities: the Jules Horowitz reactor (RJH) under construction and the international experimental thermonuclear reactor of the *Tokamak* ITER type.

- The Marcoule Center (Bagnol-sur-Sez) is engaged in the processing of SNF.

- The Center of Valduc (40 km from Dijon). Here, a simulation of nuclear tests is carried out, materials necessary for nuclear weapons are produced. Within the framework of the British-French agreement on cooperation in the field of defense in 2010, the *Epure* radiographic and hydrodynamic testing station operates here, which allows to study the behavior of materials in extreme conditions, as in a nuclear explosion.

- The Sesta Center (near Bordeaux) is responsible for the integrated design of nuclear warheads. The *Megajoule* laser operates on the basis of the center, which also allows modeling of nuclear warheads, work is underway to introduce the *Petal* laser within the LMJ for scientific research.

- The Gramat Center (Lot department) conducts research for the Directorate General of Armaments (DGA) on the vulnerability of French nuclear weapons to nuclear and conventional weapons of other states, explores methods of combating UAVs.

- Center of Le Ripault (15 km from Tours) develops and produces materials for non-nuclear components of French nuclear weapons, as well as for large installations of the simulation program (*Epure*, LMJ). It designs, manufactures, maintains in working conditions, and then disassembles pyrotechnic components and shells of nuclear warheads, provides *technical assistance* to the authorities in countering proliferation threats⁶⁸.

⁶⁷ Le CEA, acteur clef de la recherche technologique // CEA. 2019. URL: https://www.cea.fr/Pages/le-cea/acteur-clef-de-la-recherche-technologique.aspx#/scene_lmj_1/

⁶⁸ Le Ripault // CEA. 25 Novembre 2020. URL: <https://www.cea.fr/Pages/le-cea/les-centres-cea/le-ripault.aspx>

2.3 Decision-making mechanism

Only the President of the Fifth Republic has the exclusive right to make a decision on the use of nuclear weapons. This follows from Article 5 of the Constitution, in which the President is called the guarantor of the *national independence* and *territorial integrity* of France, and from Article 15, which states that the President is the Supreme Commander-in-Chief and “presides over the supreme councils and committees of national defense”. The supremacy of the President over the strategic air forces is fixed in Decree No. 64-46 of January 14, 1964, which states that “the commander of the strategic air forces is responsible for carrying out operations by order of the President of the Republic, the Chairman of the Defense Council and the Commander-in-Chief of the armed forces”⁶⁹. Also, there is a decree of 1996, which states that “the mission, composition and conditions for the participation of nuclear forces are determined by decisions of the National Defense and Security Council,” which is chaired by the President. The same decree states that “the Chief of Staff is responsible for carrying out the actions necessary for the use of nuclear forces. He monitors the implementation of the order on the use of force given by the President of the Republic. As can be seen, the exclusive right to use nuclear weapons by the president is not explicitly prescribed in any law, but rather follows from the text of the official documents. It is most clearly expressed in the White Books of different years. For example, the 2013 White Paper states that “the implementation of the nuclear deterrence policy is the responsibility of the President of the Republic”. Today this right and duty of the president is a recognized and indisputable fact. The lack of clear wording in the laws can be explained by the fact that historically this *privilege* of the president caused public discontent. As the Sciences Po professor B. Pelopidas notes, in the 1970s, even the term *nuclear monarchy* appeared, which reflected a critical attitude to the *royal powers* of the French president regarding nuclear weapons⁷⁰. However, if we compare the French doctrine with the doctrines of other nuclear weapons, we can see that four other nuclear-weapon states the decision on the use of nuclear weapons is also taken alone and is the prerogative of either the president (Russia, USA), or the Prime Minister (Great Britain), or the chairman of the Republic (China). Therefore, today the metaphor of *nuclear monarchy* seems a clear exaggeration.

And, in principle, we can say that the decision-making mechanism is similar to the decision-making mechanisms in other nuclear-weapon states (NWS). The President of France can give an order from the *Jupiter* command post located under the Elysee Pal-

⁶⁹ Décret n° 64-46 du 14 janvier 1964 relatif aux forces aériennes stratégiques. URL: http://ervc135-amicale.fr/decret_64-46_du_14_janvier_1964.pdf

⁷⁰ Pelopidas, B. France: nuclear command, control, and communications // NAPSNet Special Reports. 9 June 2019. URL: <https://nautilus.org/napsnet/napsnet-special-reports/france-nuclear-command-control-and-communications/>



The exclusive right to use nuclear weapons by the president is not explicitly prescribed in any law, but rather follows from the text of the treaty

ace, or using a mobile command post (*poste de commandement léger déplaçable* - PCLD) - the so-called nuclear briefcase. It is known that the system was updated in 2015. However, what changes were made exactly remains unknown. After receiving the order, the Chief of General Staff of the President (*chef d'état-major particulier*) must confirm the authenticity of the order by entering his own code. After that, the order is sent to the operational center of the nuclear forces (COFN), located in Paris.

Then, if the order refers to an air-based strike, it is transmitted to one of the nuclear-purpose air bases (*Bases a Vocation Nucléaire*). After receiving an order with navigation data, the pilot and navigator enter their codes to activate the nuclear weapons. At the same time, the pilot is responsible for targeting, and the navigator is responsible for controlling the device under state control (*boitier de contrôle gouvernemental* -BCG). Another procedure exists for ship-based aircraft (Aeronaval nuclear forces or FANU), i.e. for *Rafales* based on the *Charles de Gaulle*. The fact is that these are planes with one pilot and nothing is known about the procedure for transferring and executing the order.

If the order is to be transmitted to a SSBN, it will be done through one of the National Maritime Communication Centers using very low frequency waves. The Syracuse III satellite transmission system might also be used for this purpose, but this requires that an SSBN be afloat. The order transmitted to the SSBN is also executed by two crew members: the captain of the submarine and the acting officer. Thus, presumably, both submarines and bombers comply with the so-called rule of *two people*, when responsibility for launching nuclear weapons is not assigned to one performer.

It is known that the order is transmitted through the RETIAIERE system, which operates within the universal RAMSES system, and then, as necessary, by specialized Air Force and Navy data transmission networks.

Also, in case the enemy destroys the decision-making center, there is a communication system of *last resort* SYDEREC, which is located in several places in France at once and can be moved by means of vehicles.

Thus, France has a small but sufficiently advanced nuclear arsenal, a developed scientific and technical base in the field of peaceful and military atom. The undoubted advantages of the French nuclear program are the availability of accurate and fast carriers and warheads, a high-tech system for modeling nuclear tests, and the availability of a clear and well-developed plan for the modernization of the strategic nuclear Forces. The disadvantages are the lack of a national missile defense system and budget constraints. At the same time, due to the aggravation of proliferation problems after 2001, the French deterrent weapon has had quite a few critics. A number of experts (C. Brustlein, B. Norlain, P. Drouhaud) emphasize that nuclear weapons can no longer be the last guarantee of French

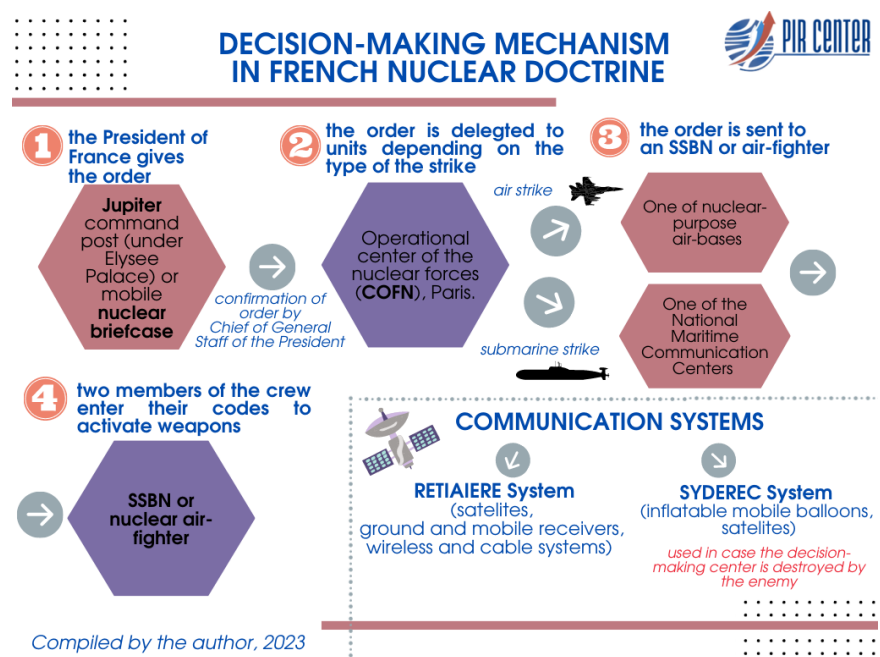
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sovereignty, because they do not respond to all the myriad of modern threats. The development of conventional weapons (especially hypersonic missiles and space weapons), the terrorist threat, the proliferation of WMD among regional powers – these risks often require States to develop non-nuclear capabilities. For example, as the former chief of the General Staff of the French Armed Forces, General E. Benteget said, “regional powers assert themselves by acquiring weapons of mass destruction, whether nuclear, biological or chemical weapons. This needs to

be taken into account and requires more targeted and more adequate responses. After all, these powers may be tempted to apply an unbearable form of blackmail to us, and we will not be able to react otherwise than with apocalyptic blows”⁷¹.

Indeed, theoretically, it is possible to imagine that France will use nuclear weapons against a cyber strike on critical infrastructure or in response to the use of chemical weapons against one of its European allies by the DPRK (and French experts quite admit such an outcome)⁷². However, will such an answer be proportional? After all, just like diplomacy, military science should adhere to the principle of reciprocity, or, in military terms, *proportionality of retaliation*.

Probably not. And in this case, the existence of a nuclear potential, not backed up by a developed information, conventional potential, in itself poses a greater danger than before, because it allows the use of nuclear weapons against non-nuclear threats and thereby increases the likelihood of the use of nuclear weapons. It would seem that the solution to the problem is obvious: it is necessary to develop appropriate types of non-nuclear potentials. However, the development of new information systems, hypersonic weapons would be an unbearable burden for the French budget. And here the question of the European defense identity is particularly acute. Some experts believe that the development of an effective defense system would be possible at the European level. As P. Drouhaud writes, “if we want to develop new weapons, we should consider



⁷¹ Cit. by: Drouhaud, P. La dissuasion nucleaire de la France et l'environnement international // Guerre mondiale et conflits contemporains. 2006. P. 127-140. URL: <https://doi.org/10.3917/gmcc.223.0127>

⁷² See Tertrais, B. French Nuclear Deterrence Policy, Forces, And Future: A Handbook // Recherches & Documents. 2020. N° 4. URL: <https://www.frstrategie.org/en/publications/recherches-et-documents/french-nuclear-deterrence-policy-forces-and-future-handbook-2020>



strengthening international cooperation by renouncing sovereignty in an area affecting the vital interests of the nation”⁷³. *Strengthening cooperation* can be carried out either within the EU or within NATO, which brings us back to the old discussion about the possibility of European autonomy. Given that many EU countries, especially the CEE countries and the Scandinavian countries still consider the nuclear umbrella as the most reliable guarantee and do not consider it necessary to create an advanced European defense capability, this prospect still seems unlikely in the next few years. In addition, the difficulties are caused by the fact that it is not easy to conduct an open discussion about nuclear deterrence in France. As an anonymous source noted in an interview with the author, nuclear deterrence is a kind of *religion* in France, because it is based on an unshakable conviction that a nuclear shield can protect France from any threat. At the same time, “the discussion of the problem in French research centers is also quite limited and all conclusions are written in advance”⁷⁴.

That is why France needs to rethink its nuclear strategy, and the problem today is not even how to properly modernize the French nuclear potential, but how to modernize the entire national and European defense system, in which nuclear weapons would not be the *last guarantee* responding to a wide range of threats, but rather an effective deterrent against nuclear threats. This is not even a national task, but a global one, because this problem is faced not only by France, but also by Russia and the United States. The new strategic security equation should combine all modern components of the military power of states, take into account the nuclear arsenals of regional powers and give an answer what place nuclear weapons should occupy in the defense doctrines of the *nuclear five*⁷⁵. According to the French diplomat N. Roche, “Western strategists must relearn how to analyze the concepts, doctrines, and potentials of other countries, to master this nuclear grammar in a new way in an environment that is radically different from what it was during the Cold War, but in which the concepts of reliability, flexible response, escalation, limited nuclear war are still applicable...”⁷⁶.

⁷³ Drouhaud, P. La dissuasion nucléaire de la France et l’environnement international // *Guerres mondiales et conflits contemporains*. 2006. P. 127-140. URL: <https://doi.org/10.3917/gmcc.223.0127>

⁷⁴ Interview with the author. 03.06.2022.

⁷⁵ See: Elements of the strategic equation: how to build arms control in a new era / Ed. by E. Chobanyan. M.: PIR Press, 2021. – 19 p. – (*Security Index Occasional Paper Series*).

⁷⁶ Roche, N. Les Occidentaux doivent maîtriser à nouveau la grammaire nucléaire // *Le Bilan du Monde*. 2018. P. 33.

CHAPTER 3. ANALYSIS OF FRANCE'S PARTICIPATION IN THE NPT REVIEW PROCESS

As mentioned above, France joined the Treaty on the Non-Proliferation of Nuclear Weapons not immediately, but 22 years after the Treaty entered into force - in 1992, there were several reasons behind this. Firstly, with the collapse of the bipolar defense system, the problems of nuclear proliferation have worsened and have become one of the main challenges to global and regional security. In these circumstances, France understood that in order to play a role in solving these problems, it needs an appropriate tool - namely, participation in the NPT as one of the main platforms for discussing non-proliferation issues⁷⁷. In addition, preparations for the 1995 Review Conference were in full swing at that time, at which the issue of extending the NPT was to be decided. France, as one of the officially recognized nuclear Powers, was interested in an indefinite extension of the Treaty. Finally, another reason that French sources do not like to mention is the Gulf War in 1990-1991. Since the 1970s, France has been the main Western supplier of weapons and nuclear technology to Iraq, which throughout the Cold War period had plans to create a nuclear bomb⁷⁸. Immediately after the end of the war, France put forward a number of initiatives for the chemical and biological disarmament of Iraq. In order to add weight to these initiatives and restore the tarnished reputation of his country, F. Mitterrand decides to sign the NPT in 1992.

Today, France is an active participant in the NPT Review Process. Like other members of the *nuclear five*, France attaches great importance to the work in the First and Second Committees of the NPT. At the same time, one of the main trends in the last few years has been the extremely offensive, sometimes even aggressive policy of France at the Review Conference and in the preparatory committees.

3.1 France's position on disarmament issues

Since the 2000s, after the reform of Jacques Chirac, when the French nuclear arsenal was reduced by more than a third, France has been rather reluctant to participate in discussions on the implementation of Article 6. For example, back in 2004, "while all the other nuclear-weapon states collectively supported progress in the implementation of the "13 practical steps" of 2000 the United States and France opposed their priority in the recommendations for the

⁷⁷ Pouponneau F., Mérand F. Diplomatic Practices, Domestic Fields, and the International System: Explaining France's Shift on Nuclear Nonproliferation // *International Studies Quarterly*. Vol. 61. Issue 1. March 2017. P. 123-135. URL: <https://doi.org/10.1093/isq/sqw046>

⁷⁸ Riding A. France Will Sign 1968 Nuclear Pact // *NYT*. 4 June 1991. URL: <https://academic.oup.com/isq/article/61/1/123/3061465?login=false#85988002>



Review Conference, and prevented the recognition of these steps as commitments for an indefinite period⁷⁹. At the same time, as Russian diplomats note, the French attitude to nuclear disarmament has always been ethical. France has repeatedly stressed that nuclear disarmament is a moral obligation of the five nuclear States and even tried to enshrine this in the Gorbachev–Reagan formula, which was reaffirmed by the members of the *nuclear five* in January 2022⁸⁰.

France believes that the steps it has taken in the field of disarmament are still sufficient and does not consider the possibility of multilateral negotiations on disarmament in the near future, firstly, because the current *strategic context* for this is unfavorable and contains a whole set of international challenges. Secondly, because the nuclear potentials of the United States and Russia significantly exceed the potentials of countries such as France. For example, the current French President, E. Macron, said in 2020: “Finally, it is important to rethink priorities in the field of disarmament. For too long, Europeans have thought it was enough to set an example and that if they disarm, others will follow their example. That’s not so. Disarmament cannot be an end in itself: it must first of all improve the conditions of international security.”

Therefore, the French disarmament agenda is aimed at promoting rather confidence-building and risk-reduction measures – the entry into force of the CTBT, the conclusion of an FMCT treaty, increasing transparency, improving the international situation as a whole. France also highlights having dismantled reprocessing plants in Marcoule and Pierrelatte. The dismantling of these facilities is irreversible, which has been repeatedly confirmed by representatives of the member States of the Conference on Disarmament (including Russia), independent experts and journalists during visits to these facilities in 2008 and 2009⁸¹. However, taking into account the fact that the production of plutonium and highly enriched uranium has been carried out since the 1960s, France still possesses large stocks of fissile materials. During this time, significant stocks of fissile materials have accumulated. According to the estimates of the International Group of Experts on Fissile Materials, France may have 25 ± 6 tons of highly enriched uranium and 700–800 kg of weapons-grade plutonium, which will make it possible to assemble more than 1,000 nuclear and thermonuclear warheads in a short time^{82,83}. France has not officially announced stocks of fissile materials, and therefore the call for the conclusion of an FMCT can be considered a rather hypocritical policy. As Soviet and Russian Ambassador R. Timerbaev

⁷⁹ NPT Briefing Book 2022 Edition // CNS. P. 31. URL: <https://nonproliferation.org/wp-content/uploads/2021/12/npt-briefing-book-2022.pdf>

⁸⁰ Joint statement by the leaders of the five nuclear-weapon States on the prevention of nuclear war and the prevention of an arms race // Website of the President of Russia. 3 January 2022. URL: <http://www.kremlin.ru/events/president/news/67551>

⁸¹ Arrêt de la production de matières fissiles pour les armes nucléaires // FranceTNP. URL: <https://www.francetnp.gouv.fr/arret-de-la-production-de-matieres-fissiles-7?lang=fr>.

⁸² International Panel on Fissile Materials. URL: <https://fissilematerials.org/countries/france.html>

⁸³ At the rate of 8 kg of plutonium and 20 kg of uranium for the production of one bomb.

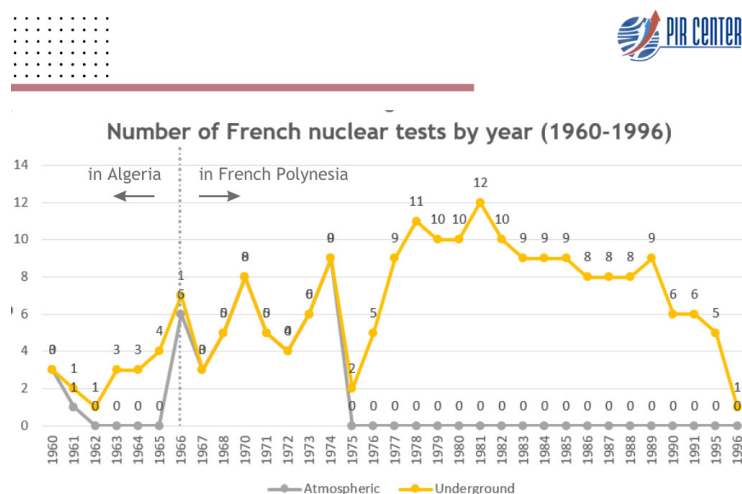
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wrote, “the more than 50-year history of international discussion of the problem of FMCT convincingly demonstrates that the solution of this important task can have a real chance of success only if along with the prohibition of future production of fissile materials for weapons purposes, there would be a move to reduce or, at least, regulate and provide transparency of the already accumulated stocks of such materials”. As the author’s interlocutors from the IAEA noted on the sidelines of the X NPT Review Conference, the stocks of fissile materials accumulated by France raise questions and are subject to various assessments.

France’s support for the entry into force of the CTBT is dictated primarily by the absence of the need to conduct its own nuclear tests. Since the 2000s, France has been implementing a program of computer simulation of nuclear tests, which uses data collected during a series of nuclear tests in 1995-1996⁸⁴.

Another important aspect of nuclear disarmament to which France attributes particular attention is enhancing transparency of nuclear disarmament. Since 2017, within the International Partnership for Verification of Nuclear Disarmament (IPNDV), France, together with Germany, has been implementing an initiative called Nuclear Disarmament Verification – NuDiVe. In France’s statement at the First Committee of the UN General Assembly it is said: “Within the NPT, we remain committed to continuing negotiations on effective measures in the field of nuclear disarmament and on a treaty on general and complete disarmament under strict and effective international control”⁸⁵. Paris has

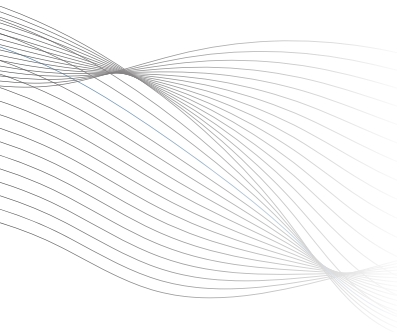
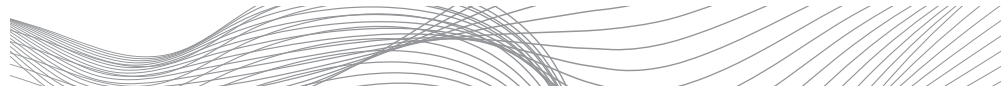
been working for several years to create a mechanism for verification of nuclear disarmament NuDiVe (Nuclear Disarmament Verification). On April 4-8, 2022, the second Franco-German test of the NuDiVe mechanism took place at the Jülich Research Center (Forschungszentrum Jülich - Germany). It was attended by experts from ten countries of the IPNDV, of which France is also a member. In the future, NuDiVe should solve the problem of controlled destruction of nuclear warheads. The fact is that the most sensitive stage of dismantling nuclear warheads is the extraction of fissile materials from them. It usually takes place behind *closed doors*, which allows, if desired, not to destroy this material, but to save it for further use for military purposes, which makes the entire disarmament process reversible. NuDiVe, allegedly, offers a solution to this problem



Compiled by the author, 2023

⁸⁴ See French nuclear tests. PIR Center website. URL: <https://pircenter.org/index.php/static/yadernye-ispytaniya-francii>

⁸⁵ Déclaration de la présidence française du P5. 1ère commission de l'AGNU 2020 // United Nations. 19 October 2020. URL: https://estatemnts.unmeetings.org/estatemnts/11.0010/20201019/knCTU9GQ0Fa/nD9pyo8Kof8u_fr.pdf



without declassifying sensitive data. In fact, the whole mechanism is about stricter supervision over the area where the dismantling of the warhead takes place. So, it is supposed to monitor how many warheads and containers were imported into and removed from the dismantling zone, check personnel who leave the zone through radiation monitors, oblige personnel to put stamps on the dismantled objects. Experts from different countries can monitor the process, which is why France calls this mechanism *multilateral*⁸⁶. Indeed, the bilateral verification mechanisms existing between the United States and Russia within the New START do not imply verification at the stage of dismantling a nuclear warhead. The goal of NuDiVe is just to fill this gap in the verification process and try to involve non-nuclear states in monitoring compliance with this key stage of disarmament. According to the French plan, this would strengthen the trust between the NWS and the NNWS.

Russia, together with China, oppose this initiative. As stated by the representative of Russia at the X NPT Review Conference A. Belousov, “Russia’s position on this issue is well known; it has been tested by time and experience in the implementation of disarmament agreements. We are convinced that verification procedures cannot be considered in isolation from specific

arms reduction and limitation agreements and must correspond to the subject matter and scope of the restrictions contained therein. Therefore, we do not consider the idea of developing procedures and technologies for verifying nuclear disarmament in advance for their possible use in some speculative future agreements... In fact, it is a waste of time and resources for a result that obviously cannot be implemented in practice”⁸⁷. One of the members of the Russian delegation to the X NPT Review Conference even stated that they were sure that the purpose of this initiative was to gain access to Russian and Chinese warheads. In addition, France does not disclose in detail how the procedure for extracting nuclear material from warheads takes place, which does not give Russia sufficient grounds to believe in the reliability and confidentiality of this mechanism. Criticism is also caused by the fact that the dismantling process cannot be universal and equally suitable for French, Russian and American warheads.

As the French representative from the Ministry of Defense told the author at the X NPT Review Conference, France is aware of Russia’s attitude to NuDiVe, but does not agree with its reasoning: after all, NuDiVe does not offer a complete set of verification measures,



Statement by the Permanent representative of France to the Conference on Disarmament Ambassador Yann Hwang before the Third Preparatory Committee of the 2020 NPT Review Conference, 2019

Source: www.cd-geneve.delegfrance.org

⁸⁶ NuDiVe Evaluation Report // International Partnership for Nuclear Disarmament Verification (IPNDV). 2019. URL: <https://www.ipndv.org/wp-content/uploads/2021/06/NuDiVe-Evaluation-Team-Report.pdf>

⁸⁷ Statement by Mr. Andrei Belousov, Deputy Head of the Russian Delegation at the 10th NPT Review Conference under cluster 1 “Nuclear Disarmament”. URL: <https://russiaun.ru/en/news/050822b>

which really cannot be universal and should be developed for each individual agreement, but implies verification only of the dismantling of a nuclear warhead - a stage that would be inevitable within any potential disarmament treaty. France also claims that during the simulation there is no risk that sensitive information about nuclear warheads will *fall into the hands* of the NNWS.

During the presentation of the results of NuDiVe on the sidelines of the X NPT Review Conference, some NNWS also expressed dissatisfaction with the fact that France uses verification as a substitute for specific disarmament measures and that it is not entirely clear which countries will be allowed to verify the dismantling of warheads. Also, as E. Maitre writes, “it cannot be denied that in recent years a special emphasis has been placed on this issue, which has led to the fact that some of the NNWS consider it as a certain *political demonstration*, and not sincere efforts to achieve progress in the field of disarmament”⁸⁸.

So far, the main problem in the implementation of this initiative is the lack of a close dialogue between France on the one hand and Russia and China on the other. Without the involvement of the latter two, the initiative loses its meaning, since in this case it is impossible to imagine how this mechanism can be applied in bilateral or multilateral disarmament agreements. France is not making active efforts to involve Russia and China in this format. Russia and China, in turn, do not seek to comprehend the subtleties of the initiative, considering it inherently unrealizable. And most importantly, there is no proper level of trust between the parties for such a dialogue.

Thus, France’s disarmament agenda is based rather on the logic of least damage and does not imply decisive and practically applicable measures to implement Article 6. At the same time, it is impossible not to note the originality of approaches in considering certain aspects of the disarmament process.

3.2 France’s position on nonproliferation issues

France’s historical role in strengthening the non-proliferation regime has been ambiguous. During various periods of the Cold War, France supplied nuclear technologies and, in some cases, highly enriched uranium to Israel, Iraq, Pakistan, South Africa, and Iran. However, since the second half of the 1980s, the French approach to nonproliferation has become more responsible. During the Gulf War of 1990-1991, when Iraq’s nuclear, biological and chemical weapons programs became widely known, France hastened to cleanse its tarnished reputation of a proliferator and strongly supported UN Security Council Resolution 687, which prohibited the development



The French disarmament agenda is aimed at promoting rather confidence-building and risk-reduction measures - the entry into force of the CTBT, the conclusion of an FMCT treaty, increasing transparency, improving the international situation as a whole

⁸⁸ Maitre, E. The challenges of nuclear disarmament verification. URL: <https://www.frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2020/202010.pdf>



of WMD programs by Iraq. Following this, France signed the NPT in 1992.

With the end of the Cold War and the aggravation of transnational threats, France is trying to play a more significant and positive role in addressing nuclear nonproliferation issues. The culmination of these efforts was the initiative of France to start negotiations with Iran in 2003, when, despite US desire to resolve the issue by military means, France took the initiative to negotiate.

Doctrinally, France's intervention in resolving these issues is based on two imperatives: firstly, the development of nuclear programs in these states may pose a threat to France's *vital interests*, and secondly, France, as a permanent member of the UN Security Council and as the official owner of nuclear weapons, is obliged to maintain order in the world and prevent the WMD proliferation. So, during his presidential campaign, F. Hollande, who had not previously expressed his position on foreign policy issues, said, "precisely because France fully complies with its obligations as a nuclear power, it is committed to a resolute and uncompromising [*sans concessions*] fight against those who have begun to develop programs that are dangerous to its stability. Therefore, in no way will I weaken our efforts to resolve proliferation crises in Iran or North Korea together with our partners"⁸⁹.

Since France's return to the NATO military organization, French rhetoric and policy in the field of nonproliferation has become more aggressive, focused primarily on political and sanctions pressure than on an equal dialogue. Paris also manifests a clear ambition to play a greater role in resolving nonproliferation issues, claiming to promote not only its own, but also pan-European interests.

Despite the declarative commitment to the nonproliferation regime and cooperation within *the nuclear five*, Atlantic solidarity is more important for France today than a balanced nonproliferation policy. This can be traced by the example of a few cases.

The first is France's attitude towards AUKUS. The recent sale by the United States and Great Britain of nuclear submarines on HEU caused a rather weak reaction from France. The Russian president called such a reaction *humiliation*⁹⁰. What's more important, after the deal was thwarted, E. Macron spoke only about the consequences of creating an alliance for French industry and commercial losses, but never once stated about the dangerous precedent that the trilateral deal creates for the nuclear nonproliferation regime⁹¹. B. Tertrais also assesses the threats that AUKUS poses to the nonproliferation regime quite mildly: "The nuclear engine certain-

⁸⁹ Cit. by: Nicoulaud, F. La France et la négociation avec l'Iran // *Confluences Méditerranée*. 2016. P. 47-60. URL: <https://doi.org/10.3917/come.096.0047>

⁹⁰ Vladimir Putin believes that the United States humiliated France with an order for submarines // *Kommersant Daily*. 26 February 2023. URL: <https://www.kommersant.ru/doc/5842171>

⁹¹ Macron: The AUKUS agreement will not affect France's strategy in the Indian and Pacific Oceans // *TASS*. 28 September 2021. URL: <https://tass.ru/mezhdunarodnaya-panorama/12522339>

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ly has its advantages, but the technology is sensitive. That's why so far, no nuclear state has sold it to a non-nuclear state (only six countries have nuclear engine technology: five official nuclear powers and India). France has never done this, despite, for example, requests from Brazil, and even though it would be relatively easy to sell a type of submarine that it already uses itself. In addition, at the time of signing the contract, Australia had not requested nuclear technology. Now the United States has broken that taboo. What would they say if it was France?

Does this mean that Australia will get access to this sovereign technology, which it could then replicate? Of course, not – technical know-how will become a *black box* to which Australia will not have access⁹². At the same time, the expert, as well as the French president, emphasizes the need to preserve France's previous strategy in the Indo-Pacific region, i.e. Atlantic solidarity and the possibility of expanding economic and political influence for France are higher than the struggle for the inviolability of the foundations of nonproliferation.

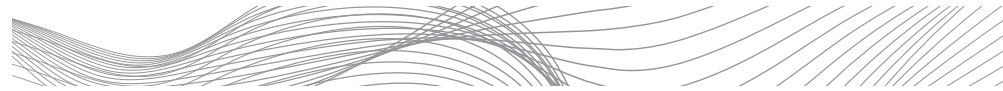
The second illustrative case is France's hostility towards Russia, which manifests itself not only in the field of nuclear nonproliferation, but also on a number of other issues (the *Navalny* case, the *Nord Streams* explosions, deliberate leaks of conversations between the French and Russian presidents). This is especially felt on the platform of the UN Security Council. As the First Deputy Permanent Representative of Russia to the UN D. Polyansky noted in his telegram channel, after the UN Security Council meeting on *Nord Streams*, "earlier, at all stages, calls for dialogue and consideration of other people's opinions were the hallmark of the French in the Security Council"⁹³. Now France is increasingly making unfounded accusations against Russia. So, at the already mentioned meeting, the French permanent representative to the UN *made a scandal*⁹⁴ and, contrary to the rules, did not allow Gazprom's press secretary Sergei Kupriyanov to respond to the accusations.

It is difficult to imagine a dialogue in conditions when one side completely ignores the arguments of the other: whether it concerns Russian demands for continuing the dialogue on arms control or the problem of the *Nord Streams*. Therefore, before starting a dialogue in nonproliferation and disarmament, it would be useful for Russia to obtain guarantees from the French side that the negotiations will be protected from leaks, mutual distortions and will be conducted in a mutually respectful manner. In general, the parties need to restore trust and reinforce it with political commitments.

⁹² Tertrais B. France, America and the Indo-Pacific after AUKUS // Institut Montaigne. 20 September 2021. URL: <https://www.institutmontaigne.org/en/analysis/france-america-and-indo-pacific-after-aukus>

⁹³ France made a scandal at a meeting of the UN Security Council, Polyansky said // RIA Novosti. 1 October 2022. URL: <https://ria.ru/20221001/oon-1820912286.html>

⁹⁴ Ibid.



Despite the declarative commitment to the nonproliferation regime and cooperation within the nuclear five, Atlantic solidarity is more important for France today than a balanced nonproliferation policy

3.2.1 France at the X NPT Review Conference

At the last X NPT Review Conference, France took extremely tough positions on the nuclear safety of the Zaporizhzhia NPP and the North Korean nuclear program. In fact, France led the camp of Western states in their *struggle* against the *Russian aggression*. “Even during the first speech at the plenary session, the head of the French delegation stated: “Nuclear weapons should not be considered as a tool of intimidation, coercion or destabilization. France condemns the statements that we are witnessing today in the context of *Russian aggression* in Ukraine. I clearly state that what we are witnessing in Ukraine is Russia’s implementation of a strategy of intimidation and coercion. This is not what France calls deterrence”⁹⁵. Throughout the work of the Second Committee, France insisted on mentioning *Russian aggression* in the Committee’s document. The Russian delegation opposed it. Thus, the head of the delegation, I. Vishnevetsky, stated at one of the meetings of the second committee: “The document covers the situation one-sidedly and does not suit the Russian delegation. Consensus can be found, but not on the basis of this document, but on the basis of two points. Firstly, all countries, without exception, are concerned about the military actions around the Zaporozhye NPP. Secondly, it is important to state the need to implement the IAEA on the basis of the Agency’s mandate. The parties are currently negotiating and many issues are being discussed. The main one is how to ensure the safety of the mission”⁹⁶. On the last day of the conference, the French delegation issued a joint statement strongly condemning “the ongoing unprovoked and unjustified aggressive war of the Russian Federation against Ukraine.” In addition, the statement said: “We condemn the heinous actions of the Russian Federation, which led to the loss of control over Ukrainian nuclear facilities by Ukraine and violation of its inalienable right to develop the study, production and use of nuclear energy for peaceful purposes.

We remain deeply concerned about the serious threat that the seizure of Ukrainian nuclear facilities and other actions of the Russian armed forces pose to the protection of these facilities, significantly increasing the risk of a nuclear accident or incident and endangering the population of Ukraine, neighboring states and the international community. These actions also undermine the ability of the IAEA to carry out its important safeguards mission [...]

We recognize and appreciate the heroic efforts of Ukrainian personnel at Ukrainian nuclear facilities, in particular at the Zaporizhzhia Nuclear Power Plant (NPP) and Chernobyl NPP, who continue to work tirelessly to ensure nuclear safety in Ukraine,

⁹⁵ Intervention prononcée par S.E.M. Philippe Bertoux. New York. 2 August 2022. URL: https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2022/statements/3Aug_France.pdf

⁹⁶ From the speech of the head of the delegation of the Russian Federation I. S. Vishnevetsky in the Second Committee of the X RevCon of the NPT.

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despite the fact that they work under enormous pressure in the context of Russia's aggression against Ukraine. [...]

We condemn the interference of representatives of the Russian Federation in the activities of the NPP and its efforts to expand control over the station..."⁹⁷.

During this speech, the Russian delegation left the hall for the first time during the entire period of the conference.

Thus, the French strategy at the X NPT Review Conference was aimed not at finding a compromise, but at discrediting Russia in the international arena. As some delegates noted, during the conference there was already an understanding about who was actually shelling of the NPP, so there is no need to talk about French *ignorance*. Due to the fact that the final document could not be adopted, the world could not fix a dangerous precedent for all mankind – the conduct of military operations around the nuclear power plant. In general, France took an extremely biased position at the conference and did not shy away from even openly false accusations. It can be said that such a policy of France and other Western *activists* has become one of the main factors for the failure in adopting the Final Document at the X NPT Review Conference.

3.2.2 France's position on the Iranian issue

The Iranian agenda has always been one of France's priorities in the Middle East. So, back in 2003, when the IAEA published a report on Iran's possible development of a nuclear bomb, French Foreign Minister Dominique de Villepin, fearing a repeat of the US Iraqi scenario in Iran, openly condemned the policy of imposing sanctions, which Washington called for, and stated the need to solve the problem diplomatically. He persuaded his German and British colleagues to go to Tehran in order to start negotiations. Thus, in October 2003, began a dialogue, the thread of which, despite many twists and turns, stretches to the present day. However, over time, France ceased to play a leading role in this dialogue, losing the primacy to the United States. As the former Russian Ambassador to Iran A. Maryasov (2001-2005) told the author at one of the discussions of the Valdai club when mutually acceptable agreements were reached at the initial stage of negotiations with Iran, the situation was blocked by the Americans: "The French ambassador to Iran then complained that although the draft agreement did not raise questions from the point of view of nuclear nonproliferation, the United States refused to support it. After that, a tougher position on this issue could not but prevail in Iran"⁹⁸.

⁹⁷ Joint Statement at the Tenth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. URL: https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2022/statements/26Aug_France-joint.pdf

⁹⁸ Relations Between Russia and Iran. An Expert Discussion // Valdai Discussion Club.



PIR Center expert seminar on the topic "Role of Nuclear Weapons in the Modern Strategic Culture of France and Interests of Russia" held in partnership with the French Club of MGIMO, 17 November 2022

Source: www.pircenter.org



Under N. Sarkozy and F. Hollande, France's position on the Iranian nuclear dossier has also tightened. France insisted on tougher terms of the Iran nuclear deal. So, at the next round of negotiations in Geneva in November 2013, Laurent Fabius refused to approve the roadmap presented by the United States and Iran, because he considered it insufficiently demanding. The position of Paris caused tension in relations with Washington. Diplomatic sources told the press that there were heated discussions between French and American officials in Switzerland. France also accused the Obama administration of seeking to conclude a deal at any cost because of the approaching end of the presidential term. As the French journalist L. Kayali writes, "the special position of Paris throughout the negotiations can be seen as "an attempt by the weakened French diplomacy to preserve its rank and independence ... to influence the process that it no longer controls"⁹⁹. In addition, the tightening of the French position under N. Sarkozy can be explained by his interest in rapprochement with Israel and the Sunni governments of the Persian Gulf states, with which France has historically maintained good relations. After the deterioration of relations with Gaddafi and the failed deal on the sale of *Rafales* to Libya, France tried to sell planes to the KSA, the UAE, Qatar and strengthen ties with these states, which probably became one of the factors in the tightening of the French position on the nuclear program of Shiite Iran.

Paradoxically, after such a shift, the French position began to be viewed by the Iranian leadership as more pro-American. This belief was especially strengthened after the US withdrawal from the JCPOA. Iranian politicians do not consider the EU, and France in particular, as a significant player in the negotiations after neither the UK, nor Germany, nor France were able to prevent the US withdrawal from the JCPOA under Trump and the introduction of American sanctions. For Tehran, this meant that the EU was no longer able not only to play an independent role, but also to defend its economic interests, because European companies left Iran due to the sanctions.

In the current negotiations, France is also trying to regain a more significant role: the first Western leader who called President Raisi after his inauguration in August 2021 was E. Macron. Back then, the French president expressed hope for an early resumption of negotiations on the JCPOA. The second telephone conversation between the two leaders followed in September, during which E. Macron proposed "to reconsider relations between France and Iran," "on the basis of new approaches, to make efforts for cooperation between the two countries in the political, economic and cultural spheres, as well as in the field of regional security"¹⁰⁰. Iranian Deputy

15 February 2023. URL: <https://valdaiclub.com/events/own/relations-between-russia-and-iran-an-expert-discussion/>

⁹⁹ Kayali L. France's Approach to a Nuclear deal with Iran // The European Institute. April 2015. URL: <https://www.europeaninstitute.org/index.php/ei-blog/258-april-2015/2024-france-s-approach-to-a-nuclear-deal-with-iran-4-28>

¹⁰⁰ Macron suggested Raisi to reconsider relations between France and Iran// TASS. 5 September 2021. URL: <https://tass.ru/mezhdunarodnaya-panorama/12307673>

ROLE OF NUCLEAR WEAPONS IN THE MODERN STRATEGIC CULTURE OF FRANCE

Foreign Minister Ali Bagheri Kani said in an interview with *Le Figaro* newspaper after his visit to Paris: “Although Russia or China are closer to our positions, after my meeting today, I can judge that France wants to play a much more serious role in these negotiations... If from today France demonstrates a more independent position, it will strengthen its position in the negotiations”¹⁰¹. However, so far there is no evidence that France has managed to increase its influence in the negotiations on the restoration of the JCPOA. So far, on the contrary, Paris is demonstrating full solidarity with its European partners and accuses Iran of not agreeing to return to the deal. On September 10, 2022, France, Great Britain and Germany issued a joint statement questioning Iran’s willingness to conclude a deal: “When we were already close to concluding an agreement, Iran again raised certain issues regarding its legally binding international obligations under the NPT and its safeguards agreement with the IAEA. This last requirement raises serious doubts about Iran’s intentions and commitment to the successful restoration of the JCPOA. Iran’s position contradicts its legally binding obligations and jeopardizes the prospects for restoring the JCPOA”¹⁰².

It is also known that after this statement, French President E. Macron met with Iranian President I. Raisi on the sidelines of the UN General Assembly to try to convince him to accept the EU’s proposal to restore the deal. President Raisi, in response, criticized the Europeans for *unconstructive actions* to restore the JCPOA, and also blamed the lack of progress in the negotiations from the US part. It is obvious that so far French and European diplomacy has failed to become a trusted mediator in the negotiations and *save* the JCPOA amid general forecasts that it will most likely not be possible to restore the deal. Moreover, in 2023, for example at the First Preparatory Committee for XI NPT RevCon France has taken a more tough position on the ongoing talks on the restoration of the JCPOA and accused Iran of “having refused several opportunities to return to the JCPOA talks maintaining the demands it knew were unacceptable”¹⁰³. Previously, the French rhetoric towards the JCPOA was more cautious. Now it seems to be more offensive and resembles that on the DPRK nuclear program.



Meeting of the Presidents of France and Iran, 2022

Source: www.middleeastmonitor.com

¹⁰¹ Malbrunot, G. Iran: “La France cherche à avoir un rôle plus sérieux dans les discussions nucléaires” // *Le Figaro*. 9 November 2021. URL: <https://www.lefigaro.fr/international/iran-la-france-cherche-a-avoir-un-role-plus-serieux-dans-les-discussions-nucleaires-20211109>

¹⁰² JCPOA: Joint Statement by France, Germany and the United Kingdom. URL: <https://www.auswaertiges-amt.de/en/newsroom/news/-/2551310>

¹⁰³ Intervention de l’Ambassadrice Camille Petit, Cheffe de la délégation de la France. // *Reaching Critical Will*. 4 August 2023. URL: https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom23/statements/4Aug_France.pdf



3.2.3 France's position on the DPRK's nuclear program

Unlike the Iranian dossier, France has historically not taken part in negotiations to resolve the North Korean problem. Nevertheless, since its inception, the DPRK's nuclear program has always been mentioned as the main threat to the nonproliferation regime in France's speeches in the Second Committee. In 2005, the representative of France advocated the resumption of the six-Party talks and "for the solution of the problem within the multilateral mechanism." And already in 2010, France supported imposing sanctions against the DPRK¹⁰⁴. Moreover, France (along with Estonia) is the last European country that has not resumed diplomatic relations with the DPRK. This shows the extreme degree of France's discontent with North Korean nuclear program. Paris believes that North Korean nuclear weapons may pose a threat to the "vital interests" of the Republic, because it is "capable of reaching the territory of Europe and NATO member countries"¹⁰⁵. It insists on the complete, transparent and irreversible disarmament of the DPRK. Otherwise, France stands for the toughest sanctions against it. Pyongyang denies France's accusations and accuses it of hypocrisy. As Ri Tok Song, Deputy director of the European Department of the Ministry of Foreign Affairs of the DPRK, said, "It is ridiculous to say that North Korea's nuclear weapons, which are a deterrent force against American blackmail and nuclear threat, can be aimed at Europe. If nuclear weapons are so bad, then France should be the first to give up its nuclear arsenal, since it is not exposed to a nuclear threat from anyone"¹⁰⁶.

Nevertheless, at the X NPT Review Conference, France acted as the main accuser against the DPRK and addressed the participants of the second committee with a joint statement on the North Korean nuclear program, which was supported by 79 States¹⁰⁷. Also, within the X NPT Review Conference of the NPT, France initiated trilateral consultations with Japan and the ROK on the DPRK's nuclear program. "It all started three years ago, when France sponsored a joint statement at the Preparatory Committee condemning the DPRK's nuclear program and calling on Pyongyang to disarm. The Republic of Korea and Japan, as the most interested states, have joined this initiative," the representative of the Republic of Korea commented to

¹⁰⁴ Statement by H. E. Mr. E. Danon, Permanent Representative of France to the Conference of Disarmament at the Second Main Committee. URL: https://reachingcriticalwill.org/images/documents/Disarmament-foa/npt/revcon2010/statements/10May_MCII_France.pdf

¹⁰⁵ Nucléaire : la Corée du Nord fustige la France qui prône un "renforcement des sanctions". // Le Figaro. 9 September 2017. URL: <https://www.lefigaro.fr/international/2017/09/09/01003-20170909ARTFIG00093-nucleaire-la-coree-du-nord-s-en-prend-a-la-france.php>

¹⁰⁶ Ibid.

¹⁰⁷ Addressing the North Korean nuclear challenge. Statement open for endorsement by all States Parties to the NPT. 10th Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). URL: https://reachingcriticalwill.org/images/documents/Disarmament-foa/npt/revcon2022/statements/19Aug_JointStatement-DPRK.pdf

the author. “I think this is how France is trying to increase its role in the NPT Review process”¹⁰⁸. At the First Preparatory Committee for the XI NPT RevCon France also intervened with the joint statement addressing DPRK’s nuclear challenge.

France is also a participant in international initiatives and multilateral mechanisms in the field of nonproliferation and disarmament - the WMD Proliferation Security Initiative, the Global Initiative to Combat Nuclear Terrorism, the Nuclear Suppliers Group, the Hague Code of Conduct to Prevent the Proliferation of Ballistic Missiles, etc. However, despite France’s active efforts in the field of disarmament, as noted by the former commander of the French air forces, General B. Norlain, “France never sends official representatives to international conferences on nuclear disarmament, apart from institutional conferences,” although such platforms are most often platforms for independent and informal discussion¹⁰⁹.

3.3 France’s position on the peaceful use of atomic energy

Due to the fact that nuclear energy provides up to 70% of the country’s energy needs, France has always advocated the development of nuclear energy and its accessibility to developing countries. Only at the III Preparatory Committee in 2004, France, together with the United States and a number of other Western states, advocated the introduction of conditions or criteria for the provision of sensitive materials and equipment for export, including the “highest standard of nuclear safety” and “analysis of the stability of the country and the region.” Ultimately, of course, these proposals were not accepted. Interestingly, even after the Fukushima accident at the NPT Review Conference in 2015, France, despite the proclaimed F. Hollande’s policy of reducing the share of nuclear energy in the country’s energy sector and closing several reactors did not even mention this in statements to the third committee, calling, on the contrary, to develop nuclear energy with greater attention to nuclear safety¹¹⁰.

For the X NPT Review Conference, France, together with other States, prepared a working document “Fundamentals for cooperation in the field of nuclear energy”, which defines the procedure and rules for concluding intergovernmental agreements in the field of nuclear energy. In addition, during the meetings of the third committee, France raised the issue of the ZNPP, condemning Russian aggression and once again blaming Russia for the shelling of

¹⁰⁸ Interview with the author. 17 August 2022.

¹⁰⁹ Norlain, B. Penser le désarmement nucléaire // Revue Défense Nationale. 2015. N° 782. P. 202-206. URL: <https://doi.org/10.3917/rdna.782.0202>

¹¹⁰ Intervention de M. Frédéric JOURNES Gouverneur pour la France à l’AIEA Directeur des relations internationales du Commissariat à l’énergie atomique et aux énergies alternatives. URL: https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2015/statements/5May_France_MCIII.pdf



the station. At the same time, the current French President played an important role in organizing the IAEA mission to the NPP in September 2022. So, it is known that at the end of August, R. Grossi came to Paris to negotiate with the Elysee Palace about the situation at the NPP. As one of the members of PIR Center Advisory Board, familiar with the situation around the NPP, said: “Grossi considers Macron an important mediator in the conflict in Ukraine and the visit of the IAEA mission to the NPP is largely the merit of the French president”.

Nevertheless, coupled with France’s unsubstantiated statements about the shelling of the Chernobyl nuclear power plant, the goal of such efforts can be considered rather to create a certain political effect, gaining political points in front of European colleagues and voters. France’s statements at the X NPT Review Conference, completely devoid of an impartial and fact-based assessment, were aimed more at distracting attention and deepening contradictions (and not only with regard to Russia) than at achieving a common result. The obvious and irresponsible indulgence of Kiev’s short-sighted actions for the sake of its own political benefits and demonstrating the unity of the Western world creates too high risks in the field of nuclear safety, and also increases the risk of the use of nuclear weapons. Obviously, such a policy has nothing to do with strengthening the nonproliferation regime.

CONCLUSIONS

The Ukrainian crisis forced France to adjust its foreign policy line in favor of almost unconditional solidarity with the United States and NATO, which cannot but affect the nuclear doctrine. Today, France recognizes the leading role of the United States in ensuring European defense and considers Russia as the main threat to European security. In this regard, France is ceding the role of the *nuclear shield* of Europe to the United States and NATO, abandoning its previous claims to leadership in ensuring the strategic autonomy of the EU.

Thus, the independence of the French nuclear arsenal today is not supported by an independent political position on key issues of European and global security, or is undermined by the limited French foreign policy resources in promoting its position. And although the French arsenal formally remains an independent element and can be used only by decree of the President of the Republic, in the conditions of France's commitment to the policy of the alliance, Russia cannot ignore the French and British nuclear arsenals in nuclear planning. This lesson will undoubtedly be taken into account by Russian diplomacy, and Russia has already stated that an indispensable condition for starting new negotiations in the field of arms control will be taking into account the French and British nuclear arsenals.

The choice in favor of Atlantic rather than Western European defense is also connected with the final recognition by France of the limitations of its own and European resources for its development. The modernization of the French nuclear arsenal to a level sufficient to protect Western Europe (the creation of missile defense, advanced strategic missile defense systems) will require excessive budget investments. In addition, it is obvious to France that it does not have sufficient conventional capacity to counter the full range of threats of a *hybrid war* in which it seeks to play a role. Participation in this war creates the appearance of influence, but, in fact, does not give political points to the French leadership, since Russia no longer considers France as a player with a *special opinion*. All attempts by the French president to mediate in relations with Russia are offset by his statements "in the spirit of alliance policy" and France's rather pretentious behavior on a number of issues.

France's commitment to the alliance's policy can also be observed in the NPT Review Process. The French statements at the last X Review Conference showed that the *human rights agenda*, pan-European solidarity and ambitions are above the desire to strengthen the nonproliferation regime and search for a compromise. Such behavior is more like *political activism* - the desire to create the appearance of participation in solving global problems with the help of loud statements from the rostrum, but with no sincere intention at honest dialogue between all interested parties. In the current



geopolitical situation, France is hardly a capable ally or mediator for Russia in the issues of nuclear nonproliferation or arms control.

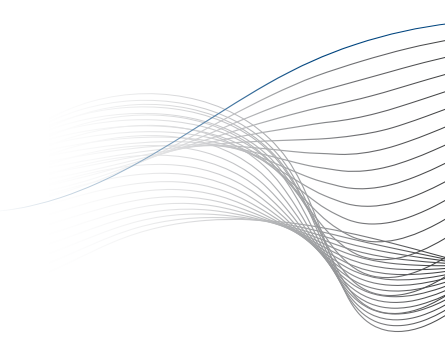
At the same time, if such a dialogue ever begins, the parties should start with the main thing: restoring trust and establishing the *game rules* for future negotiations, including guarantees against leaks, distortions, openly hostile statements against each other.

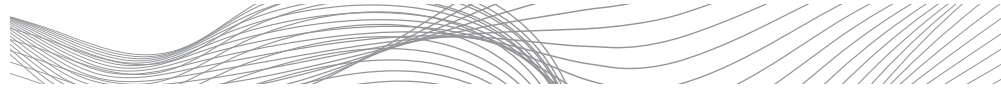
At present, France has a developed nuclear potential, which consists of a sea and air component. France has 290 warheads, of which 240 are designed to be placed on a *Triumphant*-type SSBNs, 50 – on a *Rafale*-type fighters. It is believed that the SSBMS are designed to deliver the main *massive strike*, because they can carry a larger number of warheads, and SLBMs have a longer flight range than the cruise missiles. The air component is more designed for high-precision strikes, because it has greater maneuverability and accuracy. The modern program of modernization of nuclear potential is aimed at developing the flight range of carriers, increasing their resistance against modern missile defense systems, increasing the explosive power of warheads. At the same time, France is developing its own satellite program, a missile defense system, and has advanced technologies for simulating nuclear tests.

Despite the recognition of American leadership in ensuring European defense, the development of French defense is likely to continue in spirit of *limited europeanization*, i.e. the development of individual defense projects with European countries. Such a strategy corresponds, firstly, to the general choice of France in favor of further European integration and, secondly, meets budgetary expediency. Indeed, as already mentioned, France does not have sufficient financial resources to develop modern defense capabilities in all areas. Now France has been cooperating with individual European countries (Great Britain, Spain, Italy, Germany) for individual defense projects. So far, the results of this cooperation are quite modest (the joint missile defense system can only intercept medium- and short-range missiles, missile attack warning systems are dependent on American satellites, the EU still relies on the American *nuclear umbrella* as the main defense mechanism). The main obstacle is that European countries often do not want to invest in the development of their own defense projects, relying entirely on NATO. The effectiveness of the development of the French nuclear program, which should be supported by a sufficient level of advancement of conventional weapons, will depend, among other things, on how successful France's cooperation with other countries in the field of defense will be. ■

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