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A History of the French-Influenced Euratom Program

Prior to the formation of the European Union, a collection of European Communities were formed under different categories. Namely, the European Coal and Steel Community being the first, with the European Economic Community and European Atomic Energy Community joining later on. All of these organizations focused on hosting an inclusive market where development and trading could take place between different countries in specific areas of interest, and energy was a key area that was of utmost importance. The enduring desire to have access to affordable and trustworthy energy sources, especially in the post war era, played a large role in the establishment of the European Coal and Steel Community. However, because coal was not unlimited, the deposits were on a steady track towards total depletion. In addition, the political situation following the Suez Crisis in 1956 "made all of Europe more power conscious and more receptive to the joint development of atomic energy."[5]

In light of these events, the European Atomic Energy Community was established on March 25th, 1957, following the other two communities that were implemented in the 1950's that would assist in the later formation of the European Union in 1993. In the Italian city of Rome, the Euratom treaty was signed with the stern belief that nuclear power was the key energy technology of the future.[1] The treaty signified the collaboration of member nations in the nuclear energy industry. As individual nations, availability of fissile materials and expertise was not enough to keep up with the sudden rise in nuclear prominence all throughout the world, but collectively, supplies could be distributed among member nations. But this was not an overnight process.

It all started after World War II, when the United States took a strong interest in the economic and political integration of Europe. There were many reasons for this, including that the then secretary of state George C. Marshall saw European integration as the most viable solution to the problem of what to do with Germany. Integration was also seen as the best way to strengthen Western European economic and political resistance to communism, as Euratom would provide competition to the expansion of the Soviet Union. While the Atoms for Peace Initiative greatly influenced nuclear energy initiatives in Europe, before even becoming president, Dwight D. Eisenhower called for European unity because he believed it was the best way to provide security for the continent in light of the Cold War that was slowly escalating.[2] Furthermore, a successful engineer by the name of Louis Armand, who was previously known for his work on steam locomotives, was tasked with conducting a study into the chance of nuclear energy use in Europe. His report decided that further nuclear development was necessary in order to fill the deficit left by the exhaustion of coal deposits and to reduce dependence on oil producers. His conclusions greatly inspired the decision to establish the European Atomic Energy Community, resulting in his appointment as the first chair of Euratom.

Concomitantly, at the frontlines of European nuclear progression, France was busy cultivating their own heavily militaristic *commissariat à l'énergie atomique* (Atomic Energy Commission or CEA), having already set up their own 5-year nuclear program in 1952. Initially, France was reluctant to get involved with Euratom with fears that it would be required to yield all of its scientific breakthroughs to other European countries, with little return. However, they required an increasing supply of enriched uranium if they were to continue their progress with improving their nuclear weapon supply, which was difficult for France to obtain at that point. In spite of their collaboration with the United States, the U.S. was reluctant to exchange uranium-235 for

French plutonium. There was also the fact that the U-235 that the Americans agreed to supply in small quantities and at a very high price was not sufficiently enriched to be of any use in military applications.[5] As a result, the CEA became more open to the idea of Euratom, with the hopes that most of its aims would be technical, and provide some benefit to the French nuclear program. They ended up agreeing to the Euratom program, hoping it would benefit their military research by taking over some of the costs of the civilian nuclear program, allowing them to dedicate more of their funds to the military nuclear program.

By the end of the 1950s, the Euratom program was in action, with nuclear energy being seen around the world as a very promising source of energy. The original Member States believed that the development of nuclear energy would pave the way for economic prosperity in Europe, and even open up a new industrial revolution. Furthermore, Europe was short of domestic energy supplies, which made it dependent on foreign sources. The availability of imported energy was uncertain, and this threatened not only Europe's economic growth, but also its political security. Because technology is heavily equated with a nation's power, Euratom would also provide drastic improvements to the overall status of the European Community. The end goal was to essentially turn Europe into a third world power, independent of the United States, with its own rivaling grasp on nuclear technology.

To reach their objective, the idea was to push the initiative of peaceful nuclear energy following the recent race to the atom bomb in World War II. It was no secret that nuclear energy offered promising results with energy production, but in order to promote it, the name of nuclear energy needed to be shifted away from its militaristic counterpart, being the atomic bomb. The development of new technologies was seen as the only solution for a situation with scarce supply

that threatened to become an obstacle to economic growth. However, the cost of conducting research and constructing reactors was too high for individual member states to bear separately. It was realized that the cost had to be shared, and the duplication of efforts avoided. Despite having public interest in mind, influence from militaristic nuclear methods led to much of the initial research and work being done in secrecy to avoid scrutiny from national parliaments. Since almost all prior research was done with military technology, the two sectors were closely linked with one another. As a result of this bias, the Euratom Treaty was initially quite lenient on monitoring and control requirements when it came to research and development, which was ideal for France, who wanted to ensure their nuclear military program continued to grow.

The United States not only had the most advanced technology, but, together with the United Kingdom, it was also controlling the world supply of uranium. An agreement made between the United States and Belgium, granting the U.S. access to uranium and in exchange, Belgium received information on nuclear energy technology, as well as enriched uranium for nuclear reactors served as a catalyst to European nuclear research. As previously mentioned, France was set on obtaining technical benefits through the Euratom program, and thus they believed it was crucial that the privileges under the bilateral agreement between the United States and Belgium be transferred to the Euratom framework, as they wanted access to the United States' technological information and nuclear materials. Because the United States immensely supported Euratom, they declared that the uranium would be available to the Euratom Member States and they would also get access to technological information from the United States.

The 1960's brought three prominent types of power reactors for commercial use: the gas/graphite reactors, the pressurized water reactors, and the boiling-water reactors. The first type used

natural uranium as fuel, while the other two used enriched uranium. While natural uranium was relatively cheap and easily obtainable, enriched uranium was more expensive, and had to be imported; the Member States had no domestic source of enriched uranium. France used the first type and wanted the Euratom to draw on this (French) technology instead of relying on foreign (American) technology. France argued that the Member States could secure its energy supply by using natural uranium gas/graphite reactors, as there would then be no need to import fuel. But some Member States were concerned about the French dominance in the nuclear technology field, and preferred to use American technology to close the gap between them and France. To accommodate for the cost of enriched uranium, the U.S. laid out a joint five-year research program as well as a large-scale programme for the construction of American patent reactors. Eight enriched uranium reactors were to be supplied by American manufacturers. Under this agreement, the United States not only guaranteed the enriched uranium supply, but also provided a loan to Euratom to facilitate the financing of the reactors.[3]

Following a bumpy uprising, the Euratom program experienced what many describe as its "final crisis," in the 1970's. It became clear that Euratom would not be implemented in the way the Treaty had foreseen. Time had shown that member states preferred to develop their own nuclear research, in the area of nuclear reactors, rather than pursuing joint research under the provision of Euratom. The member states were also not prepared to allow Euratom to execute some of its functions, in particular the supply monopoly as set out in the Chapter 6 of the Euratom Treaty.[6] Furthermore, the incident at Three Mile Island (1979) solidified anti-nuclear concerns among the general public and became a catalyst for new nuclear construction programs in several countries. Competition arose between France and Western Germany, who dominated the nuclear industry in Europe. This demeaned the whole purpose of the Euratom treaty, and its effort to unite Europe.

To make matters worse, the supply of enriched uranium in Western Europe under the administration of Euratom had faded, and with it, so did American influence and control over the nuclear program in Western Europe. Subsequently, the United States established further international ventures aimed at providing universal legal force over nuclear transactions, imposing competition to the Euratom system.[6] While tensions between France and Germany eventually died down in the following decades, Euratom received only occasional academic attention, making it notorious for resisting change.

In 1993, the European Union was established, effectively replacing the previously discussed European Communities. The European Union proposed one single market that has been established through a standardized system of laws that apply in all member states in those matters, and only those matters, where the states have agreed to act as one. But what did this mean for Euratom? Euratom remained legally distinct from the European Union although it has the same membership, and is governed by many of the EU's institutions. It is the only remaining community organization that is independent of the EU and therefore outside the regulatory control of the European Parliament. Following this momentous occasion, Euratom continued to supply roughly 30% of the EU’s energy and ensured that Europe’s nuclear plants were operated safely and guaranteed a secure supply of nuclear fuel.[4]

As you can see, while the initiatives proposed by Euratom were simplistic in theory, they proved to be quite disastrous through its emergence. Although it ended up providing some notable breakthroughs, such as an increased supply of enriched uranium and research insights, its initial formation was heavily influenced by military ventures, with France at the forefront. Due to both militaristic influence, as well as the fact that the treaty had experienced almost no revision

between the time of its creation and the time that the European Union was formed, the purpose of the treaty was not properly served. Indeed, it enforced an initiative to create a universal market that would allow ease of access to proper resources for nuclear energy generation, but unfortunately, its funding and resource support became infused with militaristic objectives, and unification among the member nations had shown itself to be barely apparent. Despite its tumultuous history, it was able to spread the benefits of nuclear energy throughout Europe, and continues to work towards new generations of nuclear energy.

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