



The participation of Brazil, as a possible signatory to the Additional Protocol to the Nuclear Safeguards Agreement

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1. Introduction

For decades, nuclear technology has been signaled in Brazil as a form of technological development and to have its domain is an issue of defense of sovereignty, progress, power, and the right of autonomous technology development. Since the discovery of clandestine nuclear programs by signatories to the Treaty on the Non-Proliferation of nuclear weapons (NPT), which generated a state of insecurity and uncertainty in the world nuclear scenario, the IAEA has intensified its safeguards verification methods. Even though it is a member of the NPT, Brazil, as well as other countries, has restrictions to sign the Additional Protocol to the Treaty, which will give more access to the International Atomic Energy Agency (IAEA) to the country's nuclear installations with the main objective of ensure that the nuclear programs developed by the States have peaceful purposes. The Additional Protocol - INFCIRC 540 - establishes new inspection abilities for the IAEA to verify the existence of detour of nuclear materials to produce weapons or artifacts for unknown purposes. And in this way this early detection by the IAEA can serve as a deterrent. The Additional Protocol is a legal document that gives the IAEA additional inspection competencies to those stipulated in the subjacent safeguards' agreements, of a voluntary nature. And it is in this context that this work comes to an analysis of what would be the consequences of the signature's ratification for the development of Brazilian nuclear science and technology.

2. Methodology

"According to the type of information, the research is classified as qualitative. It describes and explains by relating the global understanding concerning the nuclear issue, the safeguards treaties and the additional protocols which led to the most credible results possible with the reality of the issue in question. Concerning the objectives, the research describes the facts and events of the reality in which the country was situated in relation to the signature of the Additional Protocol to the Treaty on the Non-Proliferation of nuclear weapons - NPT, its relations with the production and dispersion of the technology to society, and the issue of national sovereignty. As to the methodology, the bibliographical research was based on a compilation of theoretical references already analyzed and published in written and electronic media, such as books, scientific articles, and web pages. This allowed the authors to know what has already been studied on the issue of nuclear safeguards and additional protocols, their aspects, national sovereignty, science, and technology. The objective of the published literature was to collect information or previous knowledge on the problem about which an answer was being sought Brazil and the issue of the signature of the Additional Protocol to the NPT.

3. Results and Discussion

The participation of Brazil as a possible signatory of the Additional Protocol to the Nuclear Safeguards Agreement (INFCIRC 540) must be considered in the perspective of the current development of Brazilian nuclear science and policy.

The peaceful use of nuclear energy and its development has been achieving in the last years great significance, working in the most diverse areas of knowledge and activities of the present society, constituting an important, decisive factor and with great potentiality for the sustainable development of the present and future generations. Brazil's aspirations to dominate nuclear technology and non-proliferation have been based on the research, acquisition, and expansion of nuclear technical and scientific knowledge, which leads the country to reduce the existing technological gap that separates it from the nuclear-armed states.

Its performance in the international stage has always been guided by the principle of equal sovereignty between states. The issue of knowledge in the nuclear area for the country is presupposed by the country's right to develop and maintain the peaceful use of nuclear technology. The "country has credentials consolidated in non-proliferation. The Federal Constitution bans the use of nuclear energy for non-peaceful purposes." (NATIONAL DEFENSE STRATEGY, 2021.)

It is worth emphasizing that Brazil has had peaceful initiatives in the field of nonproliferation and nuclear disarmament throughout its history. Before joining the Treaty on the Non-Proliferation of nuclear weapons (NPT) in 1994, Brazil ratified the TLA TELLOCO Treaty, which established the complete proscription of nuclear weapons in Latin America and the Caribbean. In 1995 and 1996, Brazil concluded the negotiation process for joining the Missile Technology Control Regime (MTCR) and joined the Nuclear Suppliers Group (NSG).

The opinions of specialists and political leaderships in Brazil in relation to the adhesion or not of Brazil to the Additional Protocol to the NPT are several and different. "The Additional Protocol has already been the object of extensive diplomatic discussion in which Brazil played a significant part. Its drafting has already adopted some of the Brazilian views, even if disguised by the 'constructive ambiguities' of the diplomats." (ALVIM, 2011.)

By the way the international community is practically unanimous in manifesting itself in favor of this engagement towards signature, defending its diverse points of view, Brazil's position is against opening its facilities to more severe inspections under an additional protocol that would make it susceptible to industrial espionage. The Brazilian position towards the signing of the Additional Protocol to the Safeguards Agreement of the International Atomic Energy Agency differs between opinions and it is in this panorama that it is necessary to analyze what would be the real consequences of the ratification of this signature for the advancement of our nuclear science and technologies, considering the pros and cons of this important and sovereign decision.

4. Conclusions

Even though Brazil is a member of the NPT and all these treaties, it is under some pressure to sign the Additional Protocol to the Treaty, even if it complies with its non-proliferation agreements and has a Bilateral Agency (ABACC) for the control of nuclear materials and is subject to a comprehensive safeguard's regime implemented by ABACC with support from the IAEA.

Concerning Brazil and the Additional Protocol - INFCIRC 540, the NPT already includes both unannounced and warned inspections. What the Additional Protocol does is to change the approach because inspections are currently done based on what the country declares. by the way it is based on international trust in the information it declares.

In addition, there is no area of technology that does not protect its secrets. Brazilian technology is more efficient than other countries, especially in ultracentrifugation technology. In the nuclear area, it is not possible to register patents, also because this would require the divulgation of a series of information that

could be used for non-peaceful purposes (GONÇALVES,2006.). The rejection of the NPT is based on the defense of sovereignty and copyright of the autonomous development of technology by Brazil. There is no sovereign country without research, technological development, and innovation.

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