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Complying with and Enlarging IAEA Jurisdiction in Nuclear Verification

1. This document presents an overview of the enforcement and enlargement of IAEA nuclear verification jurisdiction.
2. This document is in five parts:
 - Part I describes briefly the purpose of the International Atomic Energy Agency.
 - Part II describes the history of the Non-Proliferation Treaty (NPT) and current trends among nuclear states.
 - Part III presents multiple possible solutions to the issue. Delegates should consider issues regarding accuracy of detection, voluntary compliance, and limitations of technology.
 - Part IV is an overview of bloc positions. This is not an exclusive or exhaustive list of potential positions. Deep research on individual assignments is essential.
 - Part V is a list of potential questions to considering during discussion of the topic.
 - Part VI are resources to aid in researching the topic. It is recommended that delegates investigate these sources as they have inspired this topic.

For reasons of economy, this document has been printed in a limited number.
Delegates are kindly requested to bring their copies of documents to meetings.

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Section I—Introduction

The International Atomic Energy Agency, or the IAEA, was created on July 29, 1957 as a branch of the United Nations. The purpose of the organization has been to promote peaceful use of nuclear energy and in turn inhibit its military application. The use of radiation in cancer treatments has given IAEA responsibility of bringing radiation to developing countries.

Section II—Topic Background

The monitoring of nuclear energy takes many forms. Among the variety of protocols implemented by the IAEA, safeguards prove the most omnipresent. IAEA safeguards are technical measures that allow the international force to verify a country's commitment and conformity with established nuclear guidelines; such parameters largely dissuade the diversion of nuclear material from peaceful activities to threatening explosive devices. Most nuclear safeguards reinforce the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Designed in support of non-proliferation and disarmament, the NPT requires non-nuclear-weapon States to allow for IAEA verification. Balancing between state rights and societal obligations, IAEA safeguards generally include the collection of information, the development of verification methods, the evaluation of nuclear activities, and finally the drawing of safeguard conclusions. The scope of such IAEA activities includes material accountability, physical security, and containment; ensuring proper utilization, the IAEA continues to research new technologies that enhance its safeguard initiatives.

Intended to promote nuclear cooperation and control, IAEA safeguards, however, suffer from a variety of multilateral issues. While nuclear energy has become more and more prevalent, IAEA funding remains stagnant, resulting in potentially tentative and short-lived establishments. Furthermore, IAEA legislations have long faltered in the face of nuclear disobedience, typically stemming from a lack of real-time authority. Clandestine reactors and independent refineries tarnish safeguard legitimacy and highlight the IAEA's inherent loopholes. Although the Board of Governor's 1993 Additional Protocol helped intensify the agency's investigatory privileges and access to information, there still exist no concrete measures protecting against nations refusing the NPT or leaving following successful compliance. In such situations, questions arise as to how efficiently nuclear verifications ensure universal security.

Nevertheless, regarding current trends, the past five years have entailed a twelve percent increase in the number of nuclear facilities under safeguard protection and a fourteen percent increase in the amount of nuclear material monitored by the IAEA. Along with new protocols concerning the decommissioning of nuclear facilities, international cooperation has intensified through pervasive trading networks and reactor-related services. In evolving efficient safeguard implementation, the IAEA even identifies several areas for verification improvement: extensive applications of modern technologies, in-field cost-saving initiatives, and productive relationships between the IAEA and regional nuclear administrative authorities. Thus, IAEA reports in 2020 expecting atomic energy production to exceed 792 gigawatts by 2050 ultimately confirm the need for practical safeguard reform and continuing verification patterns.

Section III—Possible Solutions

Remote sensing, satellite imaging, and environmental sampling technologies have been improving rapidly, although these far-field methods of verification are prone to error and misinterpretation. The International Monitoring System provides a method of detecting nuclear explosions worldwide, however determining location is inaccurate, and it is possible to cloak explosions. Additionally, civilian reports regarding possible malicious nuclear activity may be of use but are often false or misleading.

The most surefire method for ensuring that countries are complying with IAEA guidelines is through expanding IAEA jurisdiction to these regions, although it is unlikely the countries in question will comply. Near and mid-field detectors, although more accurate than the far-field methods mentioned above, require considerable proximity to the nations in question in order to function (permission will be required for placement of the appropriate devices).

Analytics of trade data have been another proposed method. Increased efforts in identifying suspicious transactions may be of use in stopping proliferation. Consider recent developments in data analytics, such as utilizing machine learning to triangulate far-field verification approaches, such as imaging and trade data.

Section IV—Bloc Positions

African Bloc: With the exception of South Africa, nations within this bloc have little access to nuclear energy. Regardless, nuclear safeguards still monitor the mining and protection of radioactive materials present throughout the continent, specifically Uranium. In supporting verification, however, African states question the NPT's inherent inequality in supporting nuclear powers. The bloc values the spread of peaceful nuclear energy.

Asian Bloc: Nuclear power in Asia is growing exponentially, with most reactors in China, India, Japan, South Korea, and Pakistan. Within the bloc, most states comply with the NPT and cooperate alongside the IAEA by way of the Asian Nuclear Safety Network. Following the Fukushima disaster, nations have collaborated in terms of nuclear information and stronger safety infrastructure.

Latin American Bloc: Nuclear power is not prevalent throughout Latin America. Currently, there are only 7 nuclear power reactors in operation, producing 2.2% of total energy use in Latin America. Many countries within this bloc have recently joined the IAEA and, resultantly, adequate safeguard infrastructure does not exist. The Tlatelolco Treaty, however, does prevent Latin American states from acquiring and testing nuclear weapons.

Middle Eastern Bloc: Political instability and corruption within the region make nuclear verification difficult. In spite of this, most of the region has joined the NPT and is working towards a Middle East weapons of mass destruction-free zone (WMDFZ). Nevertheless, recent initiatives to strengthen security measures and bolster monitoring have been met with unwelcoming legislation and secret operations.

Western Bloc: A significant portion of Western nations possess nuclear energy, therefore making safeguards within this region extremely relevant. While most countries have joined the NPT, there still exists the issue of nations advocating for stronger verification, yet being reluctant to disarm. Having the necessary funds and resources, nations within the bloc may develop new security strategies and apply them globally.

Section V—Questions That Should Be Taken Into Consideration

Has your nation joined the Non-Proliferation of Nuclear Weapons Treaty? Has it adhered to the commitments signed upon entry?

Does your nation not agree with some of the IAEA's authorial verification powers as delegated by the Additional Protocol?

How does nuclear energy affect the safety of your country's civilians? How might nuclear verification strengthen your nation's national security?

What safeguard measures and verifications could be made within your nation and then implemented globally while still respecting member states' sovereignties?

To what extent is your nation's nuclear program monitored by the IAEA?

Section VI—Helpful Sites and Resources

Overview—International Atomic Energy Agency—IAEA Safeguards [Regulatory Framework]
bit.ly/IIMUN2022-IAEA1 (Shortened URL from [iaea.org](https://www.iaea.org))

Overview—International Atomic Energy Agency—Safeguards Additional Protocol
bit.ly/IIMUN2022-IAEA2 (Shortened URL from [iaea.org](https://www.iaea.org))

Overview—International Atomic Energy Agency—IAEA Safeguards Serving Nuclear Non-Proliferation
bit.ly/IIMUN2022-IAEA3 (Shortened URL from [iaea.org](https://www.iaea.org))

Database—World Nuclear Association—Safeguards to Prevent Nuclear Proliferation
bit.ly/IIMUN2022-IAEA4 (Shortened URL from [world-nuclear.org](https://www.world-nuclear.org))

Article—The nonpartisan Nuclear Verification Capabilities Independent Task Force—
Nuclear Monitoring and Verification in the Digital Age
bit.ly/IIMUN2022-IAEA5 (Shortened URL from fas.org)

Article—Bulletin of the Atomic Scientists—The Nuclear Verification Technology That Could Change the
Game
bit.ly/IIMUN2022-IAEA6 (Shortened URL from thebulletin.org)

Potential Search Terms—Nuclear verification, Nuclear Security, Nuclear safeguards, Non-Proliferation of
Nuclear Weapons Treaty, IAEA safeguard jurisdiction