

The background of the slide features a large, intricate white geometric pattern resembling a complex knot or a stylized atomic structure. In the center of this pattern is the official logo of the International Atomic Energy Agency (IAEA). The logo consists of a central shield with a sun rising over a globe, flanked by olive branches, and surrounded by a laurel wreath. The shield is set within a circular frame containing the IAEA emblem and the agency's name in both English and Russian.

International Atomic Energy Agency

Topic: The Fortification of IAEA protocol in
the 21st century

L G S M U N I X

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Introduction

The International Atomic Energy Agency, also known as the IAEA, is an international organization that seeks to promote the peaceful use of nuclear energy, and to inhibit its use for any military purpose, including nuclear weapons. Delegates in this committee must examine previous IAEA frameworks and policies and aim to ensure a nuclear free world.

The IAEA was formed in 1957 in an attempt to prevent the diversion of peaceful nuclear materials and technology for military purposes through early detection. By the mid-1960's, the IAEA had established a program of on-site inspections, audits, and inventory controls to execute its mission. The IAEA has considered reassessing the safeguards that are currently in place due to weaknesses in the process and the implementation of these safeguards. Some of the recognized issues include timely and efficient detection of military weapons programs, the illicit trafficking of nuclear materials, and non-compliance with the NPT. Many of these problems have presented themselves in recent years with the nuclear programs of the Islamic Republic of Iran and the Democratic People's Republic of Korea (DPRK).

Structure of the IAEA

Currently, the International Atomic Energy Agency consists of 154 member states, all of which are represented in the General Conference (GC), where each of them has a single vote. The GC is the highest decision making entity in the IAEA, which meets annually in December to determine the required budget for the agency. Approve of the annual report that is submitted by the board of governors and to give recommendations to the board about future actions. This Board of Governors comprises of 35 elected members of the IAEA, and is the main executive organ of the agency. Each member is selected for a yearlong tem by the fifteen outgoing board members, or a two year long term by the GC based on a system ensuring the equitable distribution of regions. The m embers are all experts on the subject, and meet five times annually, with 2 meetings held before and after the General Conference meets each year in September.

Relationship with the United Nations

From the start, the IAEA has focused its mission to be under the United Nations, and has worked in accordance with the principles of the United Nations Charter. However, the IAEA is still unique in the UN system as there are no other agencies

focusing solely on nuclear technology and the issues related to it. Annual reports are submitted by the General Conference to the United Nations General Assembly Plenary, or to the Security Council if the issue is directly linked to international security. The Security Council can then request the agency to take actions regarding issues concerning peace and international security. Security Council resolutions regarding the proliferation of nuclear weapons and safeguards, such as resolutions 1373 and 1540, which highlight this cooperation and have become the crux of the agency's legal framework. Both of these resolutions call for greater cooperation between the United Nations and the International Atomic Energy Agency, in an attempt to tackle the problems of nuclear terrorism and non-state actors being in possession of nuclear material. In order to do this, the IAEA has made a number of programs to support member states taking action to deal with these concerns.

Non-Proliferation Treaty

The Non-Proliferation Treaty was signed by United Nations member states in 1968. This treaty stated that only a state "which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967" shall be treated as a legal nuclear weapon state. It forbids all other states from acquiring nuclear weapons and requests all states

all ready in possession of nuclear weapons to use them peacefully through the help of assistance, material and knowledge. It entered into force in 1970, and since then, has often been referred to as a system comprising of three pillars; disarmament, non proliferation and the right to use nuclear technology peacefully. While this was not negotiated within the IAEA, the IAEA was assigned to overlook its treaty provisions. It also, for the first time, declared the successful establishment of safeguards as a responsibility of the agency.

What are safeguards?

Safeguards are defined by the IAEA as "activities by which the IAEA can verify that a State is living up to its international commitments not to use nuclear programs for nuclear-weapons purposes." In other words, they are a set of measures by which the IAEA ensures that nuclear stockpiles in the member state in question are being used for peaceful purposes only. The Non-Proliferation Treaty urges that States Party to it apply safeguards to the transfer of nuclear material to and from non-nuclear weapons states. Safeguards include inspections of facilities, locations and ensuring materials are actually used the way that the member state has declared.

Within the world's current nuclear non-proliferation regime, the IAEA's

safeguards system acts as a confidence-building measure, which can also trigger other responses by the global community if and when the need arises.

Over the past decade or so, IAEA safeguards have been fortified in key areas. Measures intend to increase the likelihood of detecting a covert nuclear weapons programme and to build confidence that States are abiding by their international commitments.

What Verification Methods Are Used?

Safeguards are based on assessments of the accuracy and totality of a State's declared nuclear material and other related activities. Verification measures include visits, on-site inspections and ongoing monitoring and evaluation. Two main sets of measures are carried out in regards to the type of safeguards agreements in force with a State. One set is related to verifying state reports of declared nuclear activities and materials present. Measures are largely based on nuclear material accountancy, carried out by surveillance methods for example IAEA installed cameras at the facilities.

Another set includes methods to fortify the IAEA's inspection capabilities. They included measures mentioned in the 'Additional Protocol' (later discussed). They allow the IAEA to ensure that there

are no undeclared nuclear materials or nuclear-related activities in the state.

Comprehensive Safeguards Agreement

The comprehensive safeguards agreement includes the following measures:

- i. IAEA collection of environmental samples in facilities and at locations where inspectors have access during inspections and design information
- i. IAEA use of unattended and remote monitoring of movements of declared nuclear material in facilities and the transmission of authenticated and encrypted safeguards-relevant data to the Agency.
- ii. IAEA expanded use of unannounced inspections within the scheduled routine inspection regime.
- iii. IAEA enhanced evaluation of information from a State's declarations, IAEA verification activities and a wide range of open sources.
- iv. State provision of design information on new facilities and on changes in existing facilities as soon as the State authorities

decide to construct, authorize construction or modify a facility. The IAEA has the continuing right to verify the design information over the facility's lifecycle, including decommissioning.

- v. State *voluntary* reporting on imports and exports of nuclear material and exports of specified equipment and non-nuclear material. (Components of this reporting are incorporated in the Model Additional Protocol).
- vi. Closer co-operation between the IAEA and the State (and regional) systems for accounting for and control of nuclear material in Member States.
- vii. Provision of enhanced training for IAEA inspectors and safeguards staff and for Member State personnel responsible for safeguards implementation.

Case Study 1: The Iraq Debacle and Its Response

After signing the NPT, the safeguard system of the IAEA entered a period of equilibrium. The greatest puncture in this equilibrium came after the Persian Gulf War in 1991, with the revelation that Iraq had been carrying out covert nuclear

programs alongside the peaceful program overseen by the IAEA. Failure of the IAEA to detect such activities, in some cases not far from where inspections had taken place, resulted in a great amount of criticism from the international community. However, it is still debatable whether or not this criticism was justified. It showed that there was a fundamental weakness within the IAEA's safeguard system which needed to be fixed.

The main problem at hand was that the IAEA could only monitor state-declared activities. Determined proliferators could expand substantial undeclared nuclear capabilities without being noticed, either co-located with declared facilities or separate from them. After the IAEA board, post-Iraq, restated its right to seek special inspections, it found itself preemptorily refused on its first attempt in North Korea in 1993.

The IAEA did not have the required range of modern equipment for the verification challenges it was facing, although even states with satellite imagery and sophisticated intelligence services had missed Iraq's clandestine activities. Nonetheless, the agency established the continuing utility of safeguards in 1993 by detecting North Korea's noncompliance with its new safeguards agreement by calculating that declarations of its plutonium production were questionably low.

In 1989, it was revealed that South Africa too had produced a small nuclear arsenal. This revelation, along with the crises in Iraq and North Korea acted as a trigger which led to the development of safeguards in a whole new direction.

Strengthening Safeguards: Additional Protocol

After the discoveries in Iraq in 1990, member states agreed that there was a need for strengthened safeguards. Following this, the Board of Governors decided that under its safeguards activities, the Agency had a responsibility to determine not only the “correctness” of a country’s reports on nuclear material, but also its “completeness.” For this, they adopted an ‘Additional Protocol.’ The Additional Protocol called for the following measures:

- i. State provision of information about, and IAEA inspector access to, all parts of a State's nuclear fuel cycle - including uranium mines, fuel fabrication and enrichment plants, and nuclear waste sites, and to any other location where nuclear material is or may be present.
- ii. State provision of information on, and IAEA short-notice access to, all buildings on a nuclear site.

iii. IAEA collection of environmental samples at locations beyond declared locations when deemed necessary by the Agency

iv. IAEA right to make use of internationally established communications systems, including satellite systems and other forms of telecommunication.

v. State acceptance of IAEA inspector designations and issuance of multiple entry visas for inspectors.

vi. State provision of information about, and IAEA verification mechanisms for, its research and development activities related to its nuclear fuel cycle.

vii. State provision of information on the manufacture and export of nuclear-related technologies, and agency verification mechanisms for manufacturing and import locations in the State.

Case Study 2: Iran

Despite the IAEA's best efforts, if countries do not carry out Additional Protocol and comply with IAEA guidelines, irregularities can occur. In 2003, it was discovered that Iran was not sending reports under the Comprehensive Safeguards Agreement

and Additional Protocol. Iran had not reported several quantities of fissionable material to the IAEA, including nuclear material and waste. Furthermore, they did not report changes to their existing nuclear programs. The IAEA did follow up work, requesting for Iran to grant access to its facilities and asking Iran to rectify its inventory. Following this, the Board of Governors requested a suspension of nuclear activities in Iran until all of the country's accounts and facilities could be verified. After continuous unresponsiveness from the Iranian government, sanctions were imposed against them under resolution 1737. The most recent SC resolution, Resolution 2049, called for an extension of the mandate of the Panel of Experts created under SC Resolution 1929 to oversee the implementation of the Council's demands. In its Safeguards Statement of 2011, the IAEA Board of Governors stated that, "the Agency was unable to provide credible assurance about the absence of undeclared nuclear material and activities in Iran and, therefore, was unable to conclude that all nuclear material in Iran was in peaceful activities. Today, the situation is still under consideration of the IAEA and the SC.

Small Quantities Protocols

Over 100 Non-Nuclear Weapon States (NNWSs) have small quantities of nuclear materials and have concluded protocols to their CSAs which hold in abeyance many procedures in Part 2 of a CSA. These protocols are called 'small quantities protocols' or SQP, and remain intact as long as the state meets the eligibility criteria. The purpose of SQPs is to lower the burden of safeguard implementation in states with little or no nuclear activity, while still maintaining the integrity of the safeguard system. Many states with SQPs have also concluded additional protocol to their CSAs.

Problems with Detection and Timeliness

Taking Iran as an example, it is evident that the IAEA is not always able to detect misuse of nuclear material in a timely manner. After the case in Iran, it was found that some countries felt as if SQP thresholds were way too high i.e. a country could theoretically develop nuclear weapons while still complying with its SQP.

Another area of concern relates to material in big processing facilities, where there is a risk of small quantities of fissionable material might get lost inside machines or pipes, resulting in inaccurate reports which cannot be verified.

Another problem is that the IAEA can not detect a shift from peaceful to non-peaceful nuclear activities overnight. The inspection process may take 15 months or more; thus the possibility of illicit nuclear activities remains constant.

Issues with Transparency and Confidentiality

Apart from detection, the IAEA has also been criticized by member states for lack of disclosure. While the degree of confidentiality ensured by the IAEA is commendable, member states argue that too much confidentiality prevents them from assessing the effectiveness of the safeguards system and diminishes opportunities for input from other countries and civil society. Many argue that more exposure would result in pressure on the state to comply with the IAEA's recommendations.

Illicit Trafficking of Nuclear Materials

Resolution 1540, adopted by the Security Council in 2004, expressed concern over the illicit trafficking of nuclear materials by non-state actors. In the resolution, the council acted under Chapter VII of the UN Charter and decided to establish export control guidelines. It also created the 1540 committee which ensures implementation of the resolution. However, possession of nuclear

materials by non-state actors still remains a pertinent concern of the SC and the 1540 committee. While limitations on exports seem to be a widely accepted guideline, many developing countries fear that this will hinder their access to nuclear materials to develop peaceful nuclear energy.

Institutional Changes and Flexibility

In February 2011, the IAEA's Deputy Director-General and Head of the Safeguards Department, Herman Nackaerts, explained that by 2030 the number of nuclear facilities around the world would have increased by a great amount, and highlighted the need for the IAEA to evolve technologically and institutionally in order to handle this load. He said that even though the IAEA has adopted a State-level approach to safeguards, which involves looking at a country as a whole, instead of focusing on specific areas, verification measures are still fairly outdated in terms of application. He also criticized the IAEA's inclination to focus on accountancy of nuclear material, and noted the need for flexibility when detecting illegal uses of nuclear material. In future, the IAEA will have to adapt in order to fulfill its role in this regard.

Non-Compliance and the Loophole in the NPT

Article X of the Non-Proliferation Treaty affirms that all states party to the treaty have the right to withdraw from it after giving a three month notice. This occurred when the Democratic People's Republic of Korea announced that it was withdrawing from the treaty in 2003. The question that then arose with DPRK's withdrawal is how to ensure effective safeguards when the NPT allows for withdrawal and does not specify if the nuclear material acquired should be returned. This issue was debated at the 2015 NPT Review Conference. Similarly, the situation in Iran gives rise to the question of what to do when a country is in non-compliance with its safeguards agreements, as the meaning of non-compliance can be interpreted in different ways. As well as this, it is not specified whether refusal to cooperate with the IAEA when there is a suspicion of non-compliance is considered non-compliance as well.

Looking Ahead

Despite the difficulties in store for the IAEA and its safeguards system in the near future, this system is of immense importance for the conservation of global peace and security. As explained in the IAEA booklet, *Verifying Compliance with Nuclear Non-Proliferation*

Undertakings, safeguards are a crucial aspect of the global nuclear security framework. Furthermore, the booklet explains that safeguards are also necessary for "regional and national security." It must be understood that for all of the IAEA's work, states' intentions related to the use of nuclear material cannot always be predicted, and that "nuclear safeguards are only as good as the IAEA membership allows them to be."

Planning ahead, in its Long-Term Strategic Plan 2012-2013, the IAEA Department of Safeguards has highlighted a number of objectives, in addition to its plan of action for the improvement of Safeguards provisions. Moreover, It has decided to make safeguards "more objectives-based and information-driven," addressing its shortcomings regarding verification. In addition, the IAEA acknowledges current advances in nuclear technology, and is preparing to meet new challenges by adapting its safeguards system accordingly. It also discusses the IAEA's involvement in other nonproliferation activities, such as providing technical advice in the negotiation of a Fissile Material Cut-Off Treaty (FMCT). Finally, the IAEA Department of Safeguards has made a renewed commitment to working effectively with Member States.

Questions A Resolution Must Answer (QARMA)

1. How will the activities of the IAEA have to adapt to the new standards of the future?
2. With new countries establishing nuclear facilities, what can the IAEA do to ensure that all of its nuclear material is effectively safeguarded?
3. What should the IAEA do to address the concerns of Member States that safeguards are being used to limit the growth and development of peaceful nuclear facilities in nonnuclear weapons states?
4. How should the Agency deal with issues of non-compliance?
5. Should the Additional Protocol become compulsory for all States party to the NPT?
6. What can Member States do to ensure that the Agency caters to all countries' expectations and needs?

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