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REVIEW CONFERENCE OF PARTIES
TO THE TREATY ON NUCLEAR
NON-PROLIFERATION

**AGENDA- IMPLEMENTATION OF THE PROVISIONS
OF THE TREATY RELATING TO THE INALIENABLE
RIGHT OF ALL PARTIES TO THE TREATY TO DEVELOP
RESEARCH, PRODUCTION AND USE OF NUCLEAR
ENERGY FOR PEACEFUL PURPOSES.**

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ABOUT THE COMMITTEE

Article VIII, paragraph 3 of the Nuclear Non-Proliferation treaty (NPT), which will later be explained in the background guide envisages a review of the operation of the Treaty every five years, a provision which was reaffirmed by the States parties by consequent review conferences.

NPT Review Conferences have been held every five years, beginning in 1975, and most recently in 2015.

The 1995 NPT Review and Extension Conference. There were 2 objectives;

- (1) to review the Treaty's operation and
- (2) to decide on its extension. Although the review did not reach a consensus review of the Treaty's implementation

States parties successfully discuss their agreement on final Documents that assessed past performance of the treaty and on a number of key issues relating to nuclear non-proliferation and disarmament, nuclear safety and the peaceful uses of nuclear energy.

The 2005 and 2015 Review Conferences. States parties failed to reach agreement on any final document.

NUCLEAR NON-PROLIFERATION TREATY

The Treaty on the Non-Proliferation of Nuclear Weapons, commonly known as the Non-Proliferation Treaty or NPT, is an international treaty whose objective is to prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy, and to further the goal of achieving nuclear disarmament and general and complete disarmament.

Opened for signature in 1968, the treaty entered into force in 1970. As required by the text, after twenty-five years, NPT Parties met in May 1995 and agreed to extend the treaty indefinitely. More countries have adhered to the NPT than any other arms

limitation and disarmament agreement, a testament to the treaty's significance. As of August 2016, 191 states have adhered to the treaty, though North Korea, which acceded in 1985 but never came into compliance, announced its withdrawal from the NPT in 2003, following detonation of nuclear devices in violation of core obligations. Four UN member states have never accepted the NPT, three of which possess nuclear weapons: India, Israel, and Pakistan. In addition, South Sudan, founded in 2011, has not joined.

The treaty defines nuclear-weapon states as those that have built and tested a nuclear explosive device before 1 January 1967; these are the United States, Russia, the United Kingdom, France, and China. Four other states are known or believed to possess nuclear weapons: India, Pakistan, and North Korea have openly tested and declared that they possess nuclear weapons, while Israel is deliberately ambiguous regarding its nuclear weapons status.

Several additional measures have been adopted to strengthen the NPT and the broader nuclear non-proliferation regime and make it difficult for states to acquire the capability to produce nuclear weapons, including the export controls of the Nuclear Suppliers Group and the enhanced verification measures of the International Atomic Energy Agency (IAEA) Additional Protocol.

The NPT consists of a preamble and eleven articles. Although the concept of "pillars" is not expressed anywhere in the NPT, the treaty is nevertheless sometimes interpreted as a three-pillar system, with an implicit balance among them:

1. Non-Proliferation
2. Disarmament
3. The Right to peacefully use nuclear technology

These pillars are interrelated and mutually reinforcing. An effective non-proliferation regime whose members comply with their obligations provides an essential foundation for progress on disarmament and makes possible greater cooperation on the peaceful use of nuclear energy. With the right to access the benefits of peaceful

nuclear technology comes the responsibility of non-proliferation. Progress on disarmament reinforces efforts to strengthen the non-proliferation regime and to enforce compliance with obligations, thereby also facilitating peaceful nuclear cooperation. The "pillars" concept has been questioned by some who believe that the NPT is, as its name suggests, principally about non-proliferation, and who worry that "three pillars" language misleadingly implies that the three elements have equivalent importance.

1. FIRST PILLAR: NON-PROLIFERATION

- Under Article I of the NPT, nuclear-weapon states pledge not to transfer nuclear weapons or other nuclear explosive devices to any recipient or in any way assist, encourage or induce any non-nuclear-weapon state in the manufacture or acquisition of a nuclear weapon.
- Under Article II of the NPT, non-nuclear-weapon states pledge not to acquire or exercise control over nuclear weapons or other nuclear explosive devices and not to seek or receive assistance in the manufacture of such devices. Under Article III of the Treaty, non-nuclear-weapon states pledge to accept IAEA safeguards to verify that their nuclear activities serve only peaceful purposes.
- These five NWS agree not to transfer "nuclear weapons or other nuclear explosive devices" and "not in any way to assist, encourage, or induce" a non-nuclear weapon state (NNWS) to acquire nuclear weapons (Article I). NNWS parties to the NPT agree not to "receive", "manufacture", or "acquire" nuclear weapons or to "seek or receive any assistance in the manufacture of nuclear weapons" (Article II). NNWS parties also agree to accept safeguards by the International Atomic Energy Agency (IAEA) to verify that they are not diverting nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices (Article III).
- The U.S. also had nuclear warheads targeted at North Korea, a non-NWS, from 1959

until 1991. The previous United Kingdom Secretary of State for Defence, Geoff Hoon, has also explicitly invoked the possibility of the use of the country's nuclear weapons in response to a non-conventional attack by "rogue states". In January 2006, President Jacques Chirac of France indicated that an incident of state-sponsored terrorism on France could trigger a small-scale nuclear retaliation aimed at destroying the "rogue state's" power centres.

2. SECOND PILLAR: DISARMAMENT

- Under Article VI of the NPT, all Parties undertake to pursue good-faith negotiations on effective measures relating to cessation of the nuclear arms race, to nuclear disarmament, and to general and complete disarmament.
- Article VI of the NPT represents the only binding commitment in a multilateral treaty to the goal of disarmament by the nuclear-weapon states. The NPT's preamble contains language affirming the desire of treaty signatories to ease international tension and strengthen international trust to create someday the conditions for a halt to the production of nuclear weapons, and treaty on general and complete disarmament that liquidates, in particular, nuclear weapons and their delivery vehicles from national arsenals.
- Critics of the NPT-recognized nuclear-weapon states (the United States, Russia, China, France, and the United Kingdom) sometimes argue that what they view as the failure of the NPT-recognized nuclear weapon states to disarm themselves of nuclear weapons, especially in the post-Cold War era, has angered some non-nuclear-weapon NPT signatories of the NPT. Such failure, these critics add, provides justification for the non-nuclear-weapon signatories to quit the NPT and develop their own nuclear arsenals.

Other observers have suggested that the linkage between proliferation and disarmament may also work the other way, i.e., that the failure to resolve proliferation threats in Iran and North Korea, for instance, will cripple the prospects for disarmament. Some observers have even suggested that the very progress of disarmament by the superpowers—which has led to the elimination of thousands of weapons and delivery systems. could eventually make the possession of nuclear weapons more attractive by increasing the perceived strategic value of a small arsenal.

3. THIRD PILLAR: PEACEFUL USES OF NUCLEAR ENERGY

- NPT Article IV acknowledges the right of all Parties to develop nuclear energy for peaceful purposes and to benefit from international cooperation in this area, in conformity with their non-proliferation obligations.
- The third pillar allows for and agrees upon the transfer of nuclear technology and materials to NPT signatory countries for the development of civilian nuclear energy programs in those countries, if they can demonstrate that their nuclear programs are not being used for the development of nuclear weapons.
- The treaty recognizes the inalienable right of sovereign states to use nuclear energy for peaceful purposes, but restricts this right for NPT parties to be exercised "in conformity with Articles I and II" (the basic non-proliferation obligations that constitute the "first pillar" of the treaty).
- Because the availability of fissile material has long been considered the principal obstacle to, and "pacing element" for, a country's nuclear weapons development effort, it was declared a major emphasis of U.S. policy in 2004 to prevent the further spread of uranium enrichment and plutonium reprocessing (a.k.a. "ENR") technology. Countries possessing ENR capabilities, it is feared, have what is in effect the option of using this capability to produce fissile material for weapons use on demand, thus giving them what has been termed a "virtual" nuclear weapons program.

- Countries that have signed the treaty as Non-Nuclear Weapons States and maintained that status have an unbroken record of not building nuclear weapons. However, Iraq was cited by the IAEA with punitive sanctions enacted against it by the UN Security Council for violating its NPT safeguards obligations; North Korea never came into compliance with its NPT safeguards agreement and was cited repeatedly for these violations, and later withdrew from the NPT and tested multiple nuclear devices; Iran was found in non-compliance with its NPT safeguards obligations in an unusual non-consensus decision because it "failed in a number of instances over an extended period of time" to report aspects of its enrichment program.

ROLE OF THE INTERNATIONAL ATOMIC ENERGY AGENCY

The IAEA as an agency is not unknown to anybody who is familiar with international affairs whether by virtue of MUNs or out of sheer interest. Facts pertaining to the founding of the IAEA, its nature and its work are readily available on the internet and a simple Google search shall be more revealing than anything this Guide can add. Therefore, this Guide shall not delve into those obvious aspects of fact. However, what is merely to be known is that the IAEA as an agency is one of its kind, with multi-state jurisdiction (with the consent of states) within the realm of its statute. Established in 1957, the IAEA came into being when development in nuclear technology was fast progressing. The primary objective of the IAEA is delineated in Article II of the Statute of the Agency which states- "The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose." Delegates would do well to read the entirety of the Statute to get more insights into the ambit of the Agency's authority. Or at least glance at it. To get more context you are encouraged to visit the website of the IAEA-

<https://www.iaea.org/> or refer to <https://www.nti.org/learn/treaties-and-regimes/international-atomic-energy-agency>

Do note that the Agency in its work, does indeed take note of the work done by other relevant bodies such as the International Commission on Radiological Protection, United Nations Committee on the Effects of Atomic Radiation, the World Health Organization and the International Labor Organization. Among its many reports on Standards, the IAEA particularly developed Nuclear Safety Standards (NUSS) and to aid in implementation, the Agency released its Codes of Practice in 1978, which itself was followed by 60 Safety Guides. These codes are not part of an international legally binding framework; however, they are significant primarily as they are inextricably linked to how the IAEA works in another state. The NUSS must mandatorily be applied whenever the IAEA is assisting any state. Post the Three Mile Island nuclear accident in 1979 and the Chernobyl disaster of 1986, two Conventions were incorporated into the framework of the IAEA-

- Convention on Early Notification of a Nuclear Accident
- Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency

PROTECTION OF NUCLEAR FACILITIES

Beyond these, it shall be worth your while to familiarize yourself with the Vienna Convention on Civil Liability for Nuclear Damage (1963), which has a meagre number of states as parties to it, but serves as a document addressing an important field associated with the IAEA and a principle of international law- Accountability. In Article III of its text, the Treaty on Non-Proliferation of Nuclear Weapons makes an explicit reference to the role of the International Atomic Energy Agency and

highlights the significance of the ‘safeguards system’ of the IAEA. The role of the Agency is well established in the contemporary system of international relations. However, the most prominent area of debate still remains the division between the procurement of nuclear material for military purposes and for civil objectives. While the international community has settled on the importance of the usage of nuclear energy for civilian goals, it has stressed on the other hand on the need to prevent the proliferation of nuclear material for military purposes. And yet, there exists no explicit prohibition on the potential deployment of nuclear weapons. The International Court of Justice did indeed address this predicament in 1996, which shall be covered in the subsequent paragraphs. At this point, it becomes important to address the engagement of the IAEA with armed attacks on nuclear installations.

The first and second Protocols to the Geneva Conventions of 1949 address the protection of “nuclear electrical generating stations”- as iterated in Article 56 of Protocol I and Article 15 of Protocol II. The restriction of protection, in armed conflict both international and non-international in nature, to electricity generating stations gives rise to the concern that other nuclear facilities go unprotected, such as nuclear research reactors, enrichment facilities, facilities for reprocessing and inter alia facilities for the storage of nuclear spent fuel. In this regard, in 1987, the IAEA General Conference adopted a resolution concerning the Protection of Nuclear Installations against Armed Attacks, and in the Preamble of which the General Conference noted that it was "aware of the fact that an armed attack on a nuclear installation could result in radioactive releases with grave consequences within and beyond the boundaries of the State which has been attacked" and that it was "convinced of the need to prohibit armed attacks on nuclear installations from which such releases could occur and of the urgency of concluding an international agreement in this regard".

Delegates are encouraged to consider this aspect during debate- particularly in the context of the laws of armed conflict. A question that arises is- whether such installations, if part of military facilities, can be considered as legitimate military

targets or not. However, there remains several other aspects to consider and the EB looks favourably upon delegates bringing up fresh sub-topics during debate.

THE SAFEGUARDS MECHANISM

Article III(a)(5) of the Agency's Statute mandates the IAEA to "establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities and information made available by the Agency or at its request or under its supervision or control are not used in such a way as to further any military purpose; and to apply safeguards, at the request of the Parties, to any bilateral or multilateral arrangement, or at the request of a State, to any of the State's activities in the field of atomic energy". Therefore, it is assumed that the application of safeguards system is a legally binding verification regime which applies in all nuclear related activities the IAEA undertakes in any State. In any activity, not under the aegis of the IAEA, the application of such safeguards is voluntary. The NPT authorizes the IAEA to conclude agreements with regard to the implementation of these safeguards- especially in non- nuclear weapon states, as iterated in above paragraphs. Understand that a "system of safeguards" is a technical medium of ensuring compliance with legal obligations in place pertaining to the peaceful uses of nuclear energy- with the NPT being the decisive authority in this regard.

Among other things, there are three features of safeguards systems which must be acknowledged.

- The implementation of safeguards is based primarily on information provided voluntarily by the State with regard to nuclear material and facilities, but not exclusively so. The IAEA has the right to investigate to ensure that all nuclear

material is subject to safeguards and as an extension, require the supplying of additional information to guard against undeclared activities.

- Secondly, the safeguards system itself cannot by itself prevent breaches of international legal obligations by states. It is in place as a mechanism to delineate procedures for “remedial action” in case of a diversion from peaceful nuclear activity. The legal measure to be taken in case of a breach, by the IAEA Statute, is to refer the case to the United Nations Security Council.

- The safeguards system is not an attempt to predict the future intentions of states vis-à-vis nuclear activities, It exists only to report on the existing situation and possibly deter deviation from peaceful uses of nuclear material.

For the implementation of these safeguards, agreements are undertaken between the IAEA and specific states, and each agreement is tailored to the requirement of particular facilities in these states.

There are three categories of Safeguards Agreements-

First- With non-nuclear weapon States that have made a commitment to nuclear non-proliferation.

Second- With non-nuclear weapon States that have not made such a commitment.

Third- Agreements with all nuclear weapon states.

Fourth- Agreements with non-nuclear weapon States that have not made a commitment to non-proliferation but are willing to make it as a part of the Safeguards agreement.

Under Article XII of the Statute, the IAEA is required to report to the UN Security Council and the General Assembly along with all IAEA member States if it discovers non-compliance with any agreement. The Agency has done so, thus far, in the instances of non-compliance by the Democratic People’s Republic of Korea and the State of Iraq. Following the discovery of a large undeclared nuclear programme in Iraq, revealed in the aftermath of the Iraq War, the ineffectiveness of the safeguards system in the case of undeclared activities became evident. The IAEA has since worked on its ability to detect undeclared nuclear activities. It instituted a safeguards

development programme (93+2) following the recommendations of a Standing Advisory Group in 1993. In 1995, the IAEA undertook the development of measures within the scope of the legal authority on safeguards- a document categorised as INFCIRC/153.

The nature of and degree of compliance with IAEA Safeguards especially with regard to undeclared sites, is still a matter of debate and another topic which the EB would wish Delegates to take note of. Apart from the above, there exist several debatable aspects relating to IAEA Safeguards and the role of the Agency at large. Delegates are encouraged to go beyond what has been stated and research into nuances that can be brought up for productive debate.

THREAT OF NUCLEAR TERRORISM¹

There is still a real danger that terrorists might get and use a nuclear bomb, the possibility of which is the most immediate and extreme threat to global security. Keeping nuclear weapons and the difficult to-manufacture materials needed to make them out of terrorist hands is critical to the world security – and to the future of nuclear energy as well. In the aftermath of a terrorist nuclear attack, there would be no chance of convincing governments, utilities, and the public to build nuclear reactors on the scale required for nuclear energy to make any significant contribution to coping with climate change.

But this will not be easy to achieve. At sites in dozens of countries around the world, the security measures in place for plutonium or HEU – the essential ingredients of nuclear weapons – are dangerously inadequate, amounting in some cases to no more than a night watchman and a chain link fence. Changing that in a small period of time, broad international cooperation, a comprehensive plan, and adequate resources. The fundamental key to success will be convincing policy-makers and nuclear managers around the world that nuclear terrorism is a real threat to their countries' security, worthy of new investments of their time and resources to reduce the risks – something

¹ <https://www.amacad.org/publication/reducing-greatest-risks-nuclear-theft-terrorism>

many of them do not believe today. Theft of potential nuclear bomb materials is not just a hypothetical worry; it is an ongoing reality, highlighting the inadequacy of the nuclear security measures in place today: the IAEA has documented some 18 cases of theft or loss of plutonium or HEU confirmed by the states concerned (and there are more cases that the relevant states have so far been unwilling to confirm, despite the conviction of some of the participants). In virtually all of the known cases, no one had ever noticed the stolen material was missing until it was seized, suggesting that other thefts may have gone undetected.

Fortunately, there is no convincing evidence that any terrorist group has yet gotten the nuclear material or the expertise needed to make a bomb (though we cannot know what capabilities they may have succeeded in keeping secret). Also, fortunately, hostile states are highly unlikely to choose to provide nuclear weapons or the materials needed to make them to terrorist groups, because of the possibility that this would be traced back to them and that overwhelming, regime-destroying retaliation would follow. Moreover, making plutonium or HEU on their own is beyond the plausible capabilities of any terrorist group today. Hence, if the world's stockpiles of nuclear weapons, plutonium, and HEU can be kept under tight state control, nuclear terrorism can be prevented.

Individuals or nonstate entities may attempt to acquire nuclear weapons or the materials and knowhow to produce them. There is a considerable dispute over the use of the term "terrorism", which many believe should include actions intended to produce terror by nation-states ("state terrorism") as well as by nonstate entities.

But we will use the terms "terrorism" and "terrorist", as they are commonly used, to refer only to nonstate entities. Concerns have been raised about the potential acquisition of nuclear weapons by nonstate entities from nation-states that possess these weapons. For example, The NunnLugar Cooperative Threat Reduction Program, designed to lessen the possibility that nuclear weapons could be obtained from Russia, has been only partially successful. In addition, there is concern about the possibility that nonstate entities will obtain fissile materials and the technical capability for

producing nuclear weapons, and about the possibility of those entities making so-called dirty bombs—explosive or incendiary weapons purposely contaminated with radioactive materials.

Although dirty bombs are defined as radiological rather than nuclear weapons, they could nonetheless create widespread radioactive contamination and instil great fear in the general population.

TECHNOLOGY TRANSFER

As an advanced technology, nuclear know-how cannot possibly be developed globally in developing and conflict-ridden countries, so technology transfer is the only conceivable way for the terrorists to develop their own nuclear weapons. Technology transfer process accounts for three major steps, namely acquisition, assimilation and diffusion, so a serious nuclear terrorism program should comprise all of them with specific activities for each one.

The acquisition phase involves technology selection, feasibility study considering cash flow, vulnerability exploitation, to name a few. The assimilation phase deals with technology adaptation to specific conditions of the receptor terrorist entity.

Finally, the diffusion phase consists of the technology generalization and deployment to the different terrorist-network branches. Backward engineering techniques and technology transfer centres play an important role in meeting this purpose.

Terrorists seeking a nuclear bomb or the materials to make one – or thieves seeking to supply them – will steal wherever they think they have the best chance of success in meeting their objectives. This means not only that the theft itself has to be successful, but that the terrorists have to be able to set off a nuclear bomb with what they get. The risk of nuclear theft from any particular facility or transport operation depends on:

- The quantity and quality of the material available to be stolen (that is, how difficult it would be to use it to make a nuclear bomb);
- The security measures in place (that is, what kind of insider and outsider thieves

could the security measures protect against, with what probability); and

- The threats those security measures must protect against (that is, the probability of different levels of insider or outsider capabilities being brought to bear in a theft attempt).

1. Dual Use Mechanism

Dual use, in this sense, is a distinctly ethical concept. It is, at its core, about what kinds of uses are considered legitimate or valuable, and what kinds are destructive. When scientists and policy experts wrangle over how to deal with dual-use technologies, they tend to focus on the division between applications for good or evil. This is important as a nation does not necessarily want to hinder scientific progress without a valid reason because it provides substantial benefits in the fields of energy and healthcare.

In brief, dual-use technology refers to the possibility of civilian nuclear-power technology being used in the realm of the military. In particular, several stages of the nuclear fuel-cycle allow for the diversion of nuclear material for the production of weapons.

OTHER RELEVANT INTERNATIONAL LEGAL INSTRUMENTS

While the issue of nuclear terrorism has become increasingly prevalent in the last two decades, the diplomatic channels of the international community have not been inactive on the issue. Towards understanding the role of the diplomatic cadre, of Nations and countries, of the UN and of other stakeholders, one has to only reflect on the relevant international instruments.

Before we move on to discuss this in detail, one must be clear on what an international instrument is. An international instrument is generally a treaty, convention, agreement, charter or official document that “...provides direction to State parties on how to meet their obligations to develop and implement legislation”. To be very simple, it is a document that all international stakeholders, or at least most, agree upon, that tells them the what’s, when’s, why’s, how’s, and sometimes who’s of a particular situation. For example, the most elementary international instrument in the UN is the Charter of the UN, a document which has been agreed upon and signed by every member of the UN (in effect, membership of a nation in the UN is a registration form of sorts to a not-so exclusive club, where the “I have read all the conditions and I agree” button is their signature on the Charter). Thus, most of the international law (definitely all parts of it which are codified), and all treaties, conventions, agreements, and protocols, come under this description.

All such documents are generally executed by a treaty to govern all treaties (bear with me, for this shall eventually connect to the agenda) – the Vienna Convention on the Law of Treaties (VCLT). While most countries have signed (116 of them), only a few have ratified it (35 of them, thus making it ‘codified international law’ for them). Many Nations have not ratified it, but that does not mean that they do not believe in it – some of these Nations, such as the USA, have recognized certain provisions of it as part of ‘customary international law’, which is to say that it is considered a “general practice of law”, and hence accepted as binding on them.

While there are 85 articles in the VCLOT, one of importance is that of Article 26 of Part III, Section 1 on the Observance of Treaties, which is called ‘pacta sunt servanda’ (Latin legal maxim that literally means “agreements must be kept”). Article 26 reads, “Every treaty in force is binding upon the parties to it and must be performed by them in good faith.”

The implications of this are immense and shall be discussed in relation to the contents of this guide as and when the necessity arises. As you hold this thought, one must think about the basics associated with the agenda as well. A wholesome thought process on this will include questions such as cross-national terrorism, prosecution of assailants, etc. To understand the more complex treaties and instruments, one must also understand the Charter of the UN, and of two very important concepts in the same. The first of which is that of Article 2, which asks Nations to maintain international peace and security, and foster cooperation and harmony, in accordance to the principle that all Nations have an equal right to their own sovereignty, and that no Member shall threaten or perpetuate the use of force against the territorial integrity or political independence of a State (the terms used to be open to interpretation). Another such very important axis in the Charter is one dubbed as the ‘Right to Self Defence’, wherein nothing can impair the right of a Nation from the protection of its own self (again, being open to interpretation), within their rights and keep in mind their duties to the international community, until the United Nations Security Council (UNSC) has taken steps to maintain peace.

1. Convention on the Physical Protection of Nuclear Material (and Nuclear Facilities)

Before the issue of nuclear terrorism by Non-State actors (NSAs) became prominent, the need to securely transfer nuclear material and technology was realized. It became imperative that after the NPT came into effect, the only nuclear movement, so-to-

speak, which remained legal, was a transnational and trans-continental transfer of material and technology for “peaceful purposes”, so to speak.

In the duration of this movement, the logistics of protection of this nuclear material from exposure to the external environment, from contamination, from physical and chemical factors, and from human factors such as mishandling, spillage, transfer losses, and most importantly, security of the consignment, are rather delicate as compared to the provisions of security and protection afforded to stationary consignments.

In an attempt to codify a standardized set of norms for the protection of nuclear material during its transfer, the Convention on the Physical Protection of Nuclear Material (CPPNM) was adopted in 1979, with the depository body of the instrument being the IAEA. According to the USA’ Department of State, (sic.), the CPPNM

“...provides for certain levels of physical protection during international transport of nuclear material. It also establishes a general framework for cooperation among states in the protection, recovery, and return of stolen nuclear material. Further, the Convention lists certain serious offenses involving nuclear material which state parties are to make punishable and for which offenders shall be subject to a system of extradition or submission for prosecution.”

In 2005, a diplomatic convention was convened to strengthen the convention to its current form, wherein the cover of protection was extended to nuclear facilities as well. The amendment makes it legally binding for States to protect nuclear facilities and material during all times, including peaceful domestic use, storage, and transport. It also fosters increased inter-State cooperation for rapid measures in locating and recovering stolen or smuggled nuclear material, and in handling consequences of radiological sabotage, etc.

Ultimately, the legal arguments one has to handle in this matter include:

1. Whether Article 26 of the VCLOT is being upheld,
2. Whether Article 2(1) and 2(4) of the Charter of the UN is upheld in the context of spheres including but not limited to jurisdiction,

3. Whether the sanctity of Article 51, *ibidem*, is granted in the context of spheres including but not limited to jurisdiction.

2. International Convention for the Suppression of Acts of Nuclear Terrorism

The ICSANT was drafted in 2005 and effective from 2007. The ICSANT is a document which aims at cooperation between nations in prevention, investigation, and most importantly, the punishment of the assailants (or alleged assailants) of a criminalized act of nuclear terrorism and has certain salient features that include:

1. A wide definition of radioactive materials and facilities,
2. The criminalization of planning, threatening, or carrying out acts of nuclear terrorism,
3. The requirement of States to criminalize these offences via national legislation and determine penalties for such crimes,
4. Jurisdiction of States over offences,
5. Extradition of accused assailants from other States, and measures of punishment and penalty, and
6. The requirement of States to take measures to prevent and counter offences inside or outside of their territories.

ICJ ADVISORY OPINION OF 1996

The International Court of Justice, in 1996, had handed down a watershed judgement pertaining to the “Legality of the Threat or Use of Nuclear Weapons” requested by the UN General Assembly under Article 96 of the Charter of the United Nations. Prior to this, the Court had refused to issue an Advisory Opinion on a similar question put to it by the World Health Organization, because of the *ultra vires* nature of the question

given the scope of activities of the WHO. Again, the ICJ's website provides not only a valuable overview of the case (See) but also the necessary legal documents that add context to the case. It must be stated, however, that the Court, in this case, addressed matter that finds no parallel in the history of the Court- one where the legality of a certain type of armament is in question.

Therefore, few insights from the case must be highlighted.

Firstly, the Court affirmed in Paragraph 15 of the judgement that it would be addressing the "issues arising in all their respects by applying the legal rules relevant to the situation." This essentially meant that the Court applied international law as it existed at the time. It added prior to it, in the same paragraph that "the Court does not consider that, in giving an advisory opinion in the present case, it would necessarily have to write "scenarios". To study various types of nuclear weapons..." The Court also reiterated, in para 21, an established principle of international law laid down by the Permanent Court of International Justice in the Lotus case (France vs Turkey) which effectively meant that states were free to behave as they wished as long as they did not violate an existing principle of international law. The law leaves to States "a wide measure of discretion which is only limited in certain cases by prohibitive rules". The ICJ further quoted its own judgement in the Nicaragua case where it had stated that "in international law there are no rules, other than such rules as may be accepted by the State concerned, by Treaty or otherwise, whereby the level of armaments of a State can be limited." The Court however, did indeed note the unique characteristics of nuclear weapons to correctly apply the law on the use of force and the law applicable in armed conflict. Therefore, in paragraph 41, the ICJ reaffirmed the idea that "the submission of the exercise of the right of self-defence to the conditions of necessity and proportionality is a rule of customary international law." One of the most prominent parts of the judgement is found in paragraph 52, where the Court noted that "State Practice shows that the illegality of the use of certain weapons as such does not result from an absence of authorisation but, on the contrary, is formulated in terms of prohibition." It essentially hinted at the lack of an existing

international legal rule prohibiting the use of nuclear weapons. Additionally, the Court also noted, in paragraph 73, that the emergence of a customary rule in this regard is also hampered by “the continuing tensions between the nascent opinio juris on the one hand, and the still strong adherence to the practice of deterrence on the other.” Ultimately, however, the Court noted in paragraph 78, following a reference to the principle of international law known as the Martens Clause, that “if an envisaged use of weapons would not meet the requirements of humanitarian law, a threat to engage in such use would also be contrary to that law.”

CASE STUDIES

1. Pelindaba

Pelindaba is the Republic of South Africa’s biggest and most sophisticated nuclear research centre. Run by the South African Nuclear Energy Corporation (NECSA), a government-owned concern, it is located about 35km from Pretoria. Historically, in the time of Apartheid, Pelindaba served as the centre for the development, construction and storage of the six atomic bombs that South Africa had created (and since disarmed completely). Pelindaba has been a rather unlucky facility, with many incidents dotting its history. A fire in 1986 that killed two and injured two; thankfully, there was no radiological leak. In 1996, an accident exposed several workers to radiation, exposure to which killed them due to burns and cancer. But perhaps most alarmingly, Pelindaba has been subject to two cases of alleged/attempted nuclear terrorism.

The first one was back in 1994 when 130 barrels of enriched uranium residue were burgled from the facility, out of which the contents of 30 barrels worth were found dumped in the outskirts of the city, while 100 still remain missing. The other was in 2007, when four armed assailants raided the facility, trying to gain access to the control room in the eastern wing. These men were heavily armed and highly technically sophisticated and were able to disarm several firewalls and layers of

security, such as a 10,000V electric fence. While a security officer triggered an alarm that alerted the nearest police station, he was shot by these men, who later escaped the way they came. They were in the facility for 45 minutes, and it is speculated that the triggering of the alarm did not allow them to fulfil all their objectives, but that these perpetrators were, in fact, able to steal laptops containing vital new information on an alleged new technology in nuclear power generation. Three alleged perpetrators were caught after about 8 days after the incident but were released later on. It has been suggested that the People's Republic of China is behind the attack.

2. Natanz

Stuxnet is forever etched in the annals of history. Stuxnet is a plug-in malicious software that is said to have been of Israeli and/or American origin. It came to prominence when, in 2010, the Natanz Nuclear Power Plant, in Natanz in the Islamic Republic of Iran, was affected by the worm, which ultimately destroyed around a thousand uranium enrichment centrifuges, showing the possibilities of a cyber-attack over a plant that was tightly separated from the public internet by means of 'air-gapping'.

This worm also possibly contaminated an unnamed Russian power plant, according to Eugene Kaspersky, head of Kaspersky Labs, who warned that "everything you do - it's a boomerang: it will get back to you." The software spreads via several vectors, no doubt selected to ultimately allow it to infect the Programmable Logic Controllers (PLCs) at the nuclear plant it targeted. It is capable of auto-updating so that it can update old versions of itself to newer versions if they are available on a local network. It communicates with command and control servers to provide information on its spread to its creators, while also providing it with another way for it to be updated. It conceals its presence and the source of its destructive effects from plant personnel, who may be totally unaware that it is the cause of unexplained problems.

While Stuxnet is itself transmissible through networks, the incident at Natanz was

almost definitely an ‘inside job’ – the only other option was that it was a colossal blunder since nuclear plants are ‘airgapped’ (a fancy way of saying ‘disconnected from all external networks’). Therefore, it was impossible to have let Stuxnet through, without the use of some storage device, like a flash drive. And the possibility that it was a random simple worm is very unlikely since the worm itself was very specific, its method of proliferation indiscriminate, and its code virtually inaccessible in computers across the world. While intentions cannot be proven, this incident gave the Iranians enough evidence to believe that they might have a mole in their midst.

FURTHER QUESTIONS

1. What level of control regarding nuclear technology will prevent proliferation while not hindering technological progress?
2. Should the nuclear security guidelines (IAEA, NSG) be regularly updated to keep in sync with the dynamic pace of technological progress?
3. Does the mere participation of a state in the NPT/ ICSANT/ CPPNM serve as a safeguard, given its gaps?
4. Is there an adequate amount of interplay between domestic legislation and international frameworks regarding nuclear security?
5. Does an increase in regulation and oversight in nuclear trade adversely affect the economic condition of developing countries?
6. What kind of verification and compliance mechanisms could be included?

FURTHER READING

https://www.researchgate.net/publication/269668524_Article_IV_of_the_NPT_Treaty_and_Legitimacy_of_Sensitive_Nuclear_Activities

<https://wiki.bnl.gov/nuclearpediaNNSS/images/c/c9/Scheinman.pdf>

https://www.researchgate.net/publication/322576606_THE_PEACEFUL_USE_OF_NUCLEAR_ENERGY_IN_THE_GCC_CHALLENGES_AND_OBSTACLES

<https://www.iaea.org/newscenter/statements/peaceful-uses-nuclear-energy-meeting-societal-needs>

<https://www.world-nuclear.org/information-library/non-power-nuclear-applications/overview/the-many-uses-of-nuclear-technology.aspx>

<https://2001-2009.state.gov/t/vci/rls/rm/46604.htm>

<https://www.un.org/en/conferences/npt2020>

<https://thebulletin.org/2020/06/the-postponed-2020-npt-review-conference-a-modest-proposal/>

<https://www.iaea.org/sites/default/files/publications/documents/infcircs/1961/infcirc26.pdf>