



AN ANALYTICAL STUDY ON THE NUCLEAR SUPPLIERS GROUP AND INDIA'S NEED FOR NSG MEMBERSHIP

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Abstract: In the 21st century, attaining nuclear power status is perceived as a pride for sovereign nations. Nuclear power or energy can be defined as the energy released when the atomic nuclei are destroyed or joined. Various uses can be attained by nuclear power. Electricity generation is one of the essential purposes of attaining nuclear power. It is also widely used for medical, agriculture, and space exploration. The usage of nuclear power in the military field is regarded to be a global threat. To curb the usage of nuclear energy to develop weapons United Nations adopted the Non-proliferation Treaty in 1968. This treaty was supported by the Nuclear Supplier's Group, formed in 1974 to regulate the export of nuclear goods and materials. India is neither a party to NPT nor a member of NSG. This study traces the history and significance of these groups and analyses India's denial and possible membership of NSG. This study listed the benefits of India in joining the NSG.

Keywords: Nuclear non-proliferation treaty, Nuclear Supplier's Group, India, China.

I. INTRODUCTION

Nuclear power as a reliable source of electric power generation has been used extensively since its discovery. Nuclear power is commonly regarded to be an excellent solution for rising energy needs. However, besides the extensive purposes, several disasters and damages could be caused by using nuclear power. When nuclear power is extensively used for military purposes, it will be hazardous to the survival of human life. After realising the irrevocable outcomes of the second world war, especially in the cities of Japan where the nuclear bomb was dropped, United Nations decided to adopt a treaty to prohibit the proliferation of nuclear energy called the Nuclear Non-Proliferation Treaty (NPT). However, later United Nations felt that NPT alone could not prohibit the spread of nuclear energy. There need to be some regulations in exporting and importing nuclear energy, equipment, and minerals. It formed the Nuclear suppliers group (NSG) to regulate nuclear exports and imports. India is not a member of both NPT and NSG. India is a country that relies on the agricultural economy, where there is an excellent need for electric power. India's dependence on fossil fuels for generating electric power has also become a significant concern. Thus, India's need for nuclear power is immediate and essential. This paper analyses the need for India's NSG membership with two objectives. First, to trace the history of NSG, where India became the primary reason. Second, analyse the reasons for opposing India's entry to the NSG.

OBJECTIVES

1. To understand the history of Nuclear Power and the Declaration Nuclear Non-Proliferation Treaty
2. To study the history of India's Nuclear Power
3. To study the formation of the Nuclear Supplier's Group and its objectives
4. To analyse the significance and need for India's Membership in NSG

METHODOLOGY

The method adopted for the purpose of the study was descriptive, analytical, historical, explanatory, and qualitative. Data has been collected from textual analysis, official websites, Research, and news articles. The study relied on Secondary data.

II. NON-PROLIFERATION TREATY

The non-proliferation treaty is an international agreement that prohibits nuclear weapons spread due to their hazardous effect and illegal usage. Nuclear proliferation may lead to the development of nuclear weapons by armed non-state actors that will pave the way for the deadliest attacks. It was signed on the 1st of July 1968 and came into force in 1970. NPT is regarded as one of

the significant treaties of the twentieth century that has been appreciated for its effort to end the extensive use of nuclear weapons. Three primary objectives of NPT are as follows; First, Non-proliferation – to prohibit the spread of nuclear weapons from nuclear-rich states to other states; Second, Nuclear disarmament, which means disbanding the existing nuclear weapons by the nuclear power states. By 1970 there were five nuclear power states; the USA became the first state to conduct a nuclear test in 1943, popularly called the Manhattan Project. USSR became the second state to conduct a nuclear test in 1949. They were followed by UK and France in 1958 and 1960, respectively. China conducted its nuclear test in 1964, immediately after the 1962 war with India. NPT declares these five state nuclear power states. These five states are also permanent UNites nations security council (UNSC) members. The third objective is Nuclear power for peaceful purposes which means nuclear power has to be utilised for civilian purposes. Nuclear power cannot be banned even after receiving its essential need for generating green energy, and also it can be extensively used in medical research. The treaty states that countries already equipped with nuclear weapons should aim for nuclear disarmament, and countries without nuclear weapons should not aim to conduct a nuclear test in the future.

The Non-proliferation treaty is significant because it is accepted by 191 states, more than 95% of the global nations. Only five states are non-signatories of NPT: India, Pakistan, Israel, North Korea, and South Sudan. India, Pakistan, and North Korea have already conducted their nuclear test in these five states. North Korea was earlier a state party to the NPT; they announced their exit in 2003. Israel is allegedly equipped with nuclear power but is not yet officially acknowledged. South Sudan is the latest state that was formed in 2011. Their latest formation might be the reason for their non-participation in the NPT.

One of the significant challenges of the NPT is making the states adhere to the principles and guidelines. As a result, Iran and North Korea are often accused of violating their commitments to the treaty. In addition, the International Atomic Energy Agency, previously a UN agency, is now an independent body responsible for monitoring and verifying the proper utilisation of nuclear energy. However, some states deny the inspections conducted by IAEA, which is considered a challenge for the NPT.

India is a non-signatory of NPT for various reasons. First, the idea of non-proliferation of nuclear weapons was proposed in 1958 by Jawaharlal Nehru, former prime minister of India, which was then not accepted by the UNSC. By 1958 there were only three nuclear power states, and India was only 11 years old independent state whose opinion was not much welcomed. Second, NPT was regarded as a discriminatory treaty by Indra Gandhi, the then prime minister of India. NPT classified the states into two categories nuclear power states and non-nuclear power states, where five permanent countries of UNSC became nuclear power states and the rest of the world as non-nuclear power states. This also prohibited the future nuclear test by the non-nuclear power states. Third, there was no definite due time for the nuclear weapon countries to disband their nuclear weapon. Fourth, China, a nuclear weapon state by then, was in conflict with India; thus, India opting for NPT was not a favourable option. India stood for two alternatives; other countries should be free to conduct the nuclear test, or the five permanent countries to disband their nuclear weapons. India conducted their first nuclear test in May 1974, called Smiling Budha. India became the sixth state to conduct a nuclear test. As an opposition, India's nuclear test NSG was formed in October 1974. India also became a significant factor in Pakistan not becoming a member of the NPT.

Besides the challenges and opposition NPT is a significant treaty that has helped prevent the spread of nuclear weapons. However, the treaty's success depends on the member states' compliance. Despite the ongoing challenges, it remains a vital framework for managing the negative impacts of nuclear weapons and promoting global security.

III. NUCLEAR SUPPLIERS GROUP

The nuclear suppliers group (NSG) is a multinational group of nuclear-supplying countries that regulates the export of nuclear minerals, equipment, and technology that can be used for various nuclear purposes. In 1974 in response to India's nuclear test, NSG was formed as it was realised that NPT alone could not restrict the proliferation of Nuclear weapons. It is a 48-member body that was started with seven member states. It includes the central states like the united states, Russia, China, Germany, and France. The primary objective of the Nuclear supplier's group is to prevent nuclear proliferation and ensure that nuclear power does not fall into the wrong hands. The member states should follow guidelines provided by the NSG regarding the export of nuclear goods. These guidelines are designed in such a way as to ensure that nuclear goods that are exported are used for civilian purposes and not utilised for developing nuclear weapons. The NSG's guidelines mandate the members adhere to its principles and control the export of nuclear minerals that can be used for developing nuclear weapons. It also restricts the export of highly sensitive nuclear materials and technologies. It also encourages the member states to require appropriate safety measures for nuclear-related goods and minerals received from nuclear supplier states. The NSG controls commodities of atomic-related merchandise, including atomic fuel, innovation, and reactors. End-use verification, export documentation, licensing requirements, and compliance auditing are all examples of export controls. These measures assist in preventing the misuse of nuclear-related goods and technology. Additionally, the NSG encourages cooperation on nuclear security and safety issues. The non-proliferation of nuclear technology and materials is one of the goals of the NSG. This includes offering developing nations seeking to establish peaceful nuclear facilities technical cooperation and assistance.

In spite of the NSG's efforts to stop the spread of nuclear weapons, it has faced a number of obstacles in recent years. The increasing availability of nuclear technology and materials to non-state actors like terrorist groups is one obstacle. Because these actors have not committed to international regimes regulating nuclear materials and technology, the NSG has struggled to combat the threat they pose. The growing trend of nations seeking to acquire nuclear technology for peaceful purposes is another obstacle. These nations might want to use nuclear energy for energy or economic reasons, but they could also use the same technology to make nuclear weapons. By preventing nuclear proliferation while still allowing nations to access peaceful nuclear technology, the NSG's

guidelines aim to address these issues. Additionally, the NSG has been criticised for its lack of inclusivity and transparency. Developing nations have criticised the group's impartiality and Western dominance, claiming that the guidelines promote non-proliferation or disarmament rather than reflecting the interests of powerful member states. Additionally, developed nations typically have access to peaceful nuclear technology, which has led some developing nations to seek nuclear technology from China or Russia.

IV. INDIA AND NUCLEAR POWER

In 1974, India, a non-signatory to the Non-Proliferation Treaty (NPT), led its most significant nuclear test at Pokhran, Rajasthan. After that, India's attitude toward nuclear issues changed, and the country began to consider nuclear power to be an essential part of its energy mix. As a result of India's nuclear tests in 1974 and 1998, which were viewed as a threat to the global non-proliferation regime, the country was subjected to a number of international sanctions that restricted its access to nuclear technology. India vigorously pursued energy independence, and in 1969, the first nuclear power plant, Tarapur Atomic Power Station, was inaugurated. By 2021, India had installed a total capacity of 6780 MW for nuclear-powered electricity generation.

In the beginning, India's move toward nuclear power was solely motivated by the country's need to become energy independent. But India has become a significant participant in global nuclear energy discussions since the signing of the India-US Civil Nuclear Agreement in 2008. The fuel cycle and reactor technology are the two parts of India's nuclear program. India has been using the Harshaw Synthetic Organization of the US starting around 1958 to provide atomic fuel. However, India developed its fuel cycle in 1971 and has operated seven pressurised heavy-water reactors for the generation of nuclear energy. Additionally, India has developed its own indigenous PHWRs with a capacity of 220 MW, which together make up two-thirds of India's installed nuclear generation capacity. It has also created the 160 MW Boiling Water Reactor (BWR) at the Tarapur Atomic Power Station. In addition, India has been working on advanced heavy-water nuclear reactors, such as the 300 MW Advanced Heavy Water Reactor (AHWR) and the 500 MW Prototype Fast Breeder Reactor (PFBR) currently under construction. The PFBR can possibly reuse spent fuel into fissile material, furnishing the country with a limitless inventory of atomic fuel at negligible expenses. India has also expressed an interest in acquiring nuclear fuel or reactor technology from other nations. India and Russia agreed to build two 1000 MW nuclear reactors in Kudankulam, Tamil Nadu, in 2005. One more understanding for two additional 1000 MW reactors was endorsed in December 2014. India has likewise marked an agreement with the US-based Westinghouse Electric Organization to develop six AP-1000 reactors in Andhra Pradesh.

India's energy policy aims to consistently provide its citizens with affordable, reliable electricity. India has also stressed the importance of achieving energy security and lowering carbon emissions. As a result, India's energy policy places a commendable emphasis on nuclear power and renewable energy sources like hydro, wind, and solar. Between 2010 and 2018, India added 24.5 GW of renewable capacity, with the goal of installing 175 GW by 2022. This represents a significant expansion of the country's renewable energy sector. India currently operates eight nuclear power plants, each with a 1000 MW installed capacity, and a ninth plant is being built. India's energy strategy has put significance on well-being and security concerns. Nuclear Power Corporation of India Limited, India's regulatory body for nuclear safety, is in charge of making sure safety regulations are followed.

V. INDIA AND NSG

With its ongoing nuclear energy program and expanding nuclear weapons program, India is a significant player in the global nuclear industry. India, on the other hand, is not a member of the NSG, and its inclusion has been much debated. India's first nuclear reactor took place in 1956, making it one of the first nations to use nuclear energy. However, international safeguards did not apply to India's nuclear program until 1974, when the country carried out its first nuclear test. The NSG was established as a result of the test to control the export of nuclear materials, equipment, and technology in an effort to stop the spread of nuclear weapons. India has been excluded from the NSG ever since because it was not invited to participate in its formation.

India has been left out of the NSG for a number of reasons. First and foremost, India has not signed the Nuclear Non-Proliferation Treaty (NPT), the international non-proliferation regime's foundational agreement. The NPT requires its signatories to work toward nuclear disarmament and to refrain from transferring nuclear technology to states that do not have nuclear weapons. India's quest for NSG membership has been hampered significantly by the country's refusal to sign the NPT. It is difficult to justify admitting a nation that is not a signatory to the NPT into the NSG because the group was established to enforce the NPT's principles. India's history of conducting nuclear tests is yet another reason why it has not been included in the NSG. Three nuclear tests have been carried out by India, the most recent occurring in 1998. The international community has voiced a number of criticisms regarding the tests, which have contributed to the perception that India is not committed to nuclear non-proliferation.

China's opposition to India's NSG membership is also one of the major reasons for the denial of NSG membership, as the decision has to arrive at a consensus. Actually, at present, only China is seen as a hindrance to India's membership, whereas the rest of the members waved their support to India's entry. China claims it is discrimination where the rules are being bent for India to join NSG. China insists India sign the NPT in order to get the NSG membership. India signing NPT will also be useful for China as both countries are constantly in conflict in resolving border disputes. China also wants Pakistan to be added to NSG if India is granted its membership. China stands for two alternatives, either India needs to sign NPT, or both India and Pakistan need to join NSG without signing NPT. Since new membership to NSG is to be decided on the consensus of state parties, it is difficult for India to join NSG unless China waves its support.

VI. INDIA'S NEED FOR NSG MEMBERSHIP

The possibility of India joining the NSG has a number of potential repercussions. First and foremost, India's inclusion in the NSG would be a political and symbolic victory. It would lend credibility to India's claims that it is a trusted nuclear partner and show that India is finally being recognised as a responsible nuclear power. Second, India would gain access to sensitive nuclear technology that it currently lacks if it joined the NSG. This could assist India with fostering its thermal power program, which is a vital part of its energy security system. Thirdly, India's accession to the NSG may facilitate its rise to prominence in the global nuclear industry. India would be able to shape the rules of the game in a way that serves its own interests and would have a greater say in international nuclear governance as a member of the NSG. Fourth, It will boost India's domestic economy when India makes a better version of nuclear reactors and export that to smaller countries. Fifth, this will help India in reducing its dependence on fossil fuels and thermal power plants for generating electricity. Nuclear energy will help India in generating electricity that is eco-friendly and cost-efficient. Sixth, it will help India to achieve the carbon emission goal of attaining 50% dependence on renewable resources for electricity and reducing fossil fuel consumption. This will boost India's measures taken to curb climate change.

VII. CONCLUSION

The Nuclear Suppliers Group is an important group that works to control the sale of nuclear weapons and stop their production and spread. The gathering's rules are pivotal in forestalling the spread of atomic weapons and advancing quiet purposes of atomic innovation. However, the NSG must address significant obstacles if it is to maintain its credibility and effectiveness in upholding international nuclear non-proliferation standards. The group must include representatives from all nations to make the process more inclusive, transparent, and in line with member states' interests. India's quest for energy security and reduction of carbon emissions have made it one of the major participants in the nuclear energy sector. Nuclear power is a low-carbon alternative to fossil fuels. India has used nuclear techniques in agriculture and medical research, among other fields, and has placed emphasis on a closed fuel cycle. However, India must effectively address the issue of nuclear waste management in light of the potential expansion of nuclear energy capacity. While addressing climate change, India must strike a balance between the need for energy security and safety and security concerns. India's nuclear testing program and its refusal to sign the NPT led to its exclusion from the NSG. However, India has made significant progress over the past few years, and many nations now consider it to be a responsible nuclear power. There are many arguments about whether India should join the NSG, but it is clear that doing so could have a number of advantages. The members of the group will ultimately decide whether India should join the NSG, but it is likely that India will continue to push for inclusion in the years to come.