

**THE PROLIFERATION OF NUCLEAR WEAPONS AND THE ARMS  
RACE: THE POST-WAR DETERIORATION OF RELATIONS  
BETWEEN UNITED STATES AND SOVIET UNION 1949 - 1964**

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**ABSTRACT**

Nuclear weapons were first created over 70 years ago. They were used for the first time in battle at the tail end of the Second World War in 1945. At the height of the Cold War, the two superpowers (The United States of America and the then Soviet Union) who were mutually hostile to each other, pointed nuclear warheads at each other's capital cities and also placed, these weapons at each other's doorstep. Soon other countries acquired the technology to manufacture nuclear weapons, thereby causing instability in the international community, with its security implications. Amidst this backdrop and turbulence came the International Atomic Energy Agency (IAEA), an initiative of the two superpowers, who were increasingly getting alarmed at the rate at which the technology for developing nuclear weapons was spreading. The International Atomic Energy Agency (IAEA) is the sole international Organisation charged with preventing nuclear proliferation. In its over 60 years of existence, it has succeeded in preventing other countries except for those that have already tested and acquired nuclear weapons from obtaining and proliferating nuclear weapons and the technology to assemble one. This , however has not been easy as the IAEA is confronted yearly with dynamic challenges, some of which have threatened the security and stability of the world. The IAEA thus plays a significant role in preventing nuclear proliferation and it would continue to play this role in the foreseeable future.

**Keywords:** Proliferation, Nuclear Weapons, Arms Race, United States and Soviet Union

**1.0 INTRODUCTION**

In 1896, a French physicist called Henri Becquerel discovered the phenomenon called radioactivity.<sup>i</sup> Since that discovery was made, a number of scientists and physicists have made remarkable discoveries on this phenomenon. Notable scientists such as Wilhelm Roentgen, Enrico Fermi, Pierre and Marie Curie as well as Albert Einstein to name but a few, all made important contributions to the study of radioactivity and nuclear energy itself. But it was not until in 1945 when the full and destructive power of nuclear energy was discovered and unleashed in the world. After 1945, the world began to face the realities of nuclear energy and nuclear weapons as well. The United States dropped two atomic bombs on the two Japanese cities of Hiroshima and Nagasaki respectively.<sup>ii</sup> Its horrible and devastating effects shocked the world and as well horrified people and governments.

In the years immediately after 1945, the United States together with two of her wartime allies, the United Kingdom and Canada, began efforts at banning the use of nuclear bombs. They also had early ideas about curtailing the spread of such weapons. As such they tried to limit the use and spread of the technology used in making nuclear bombs by keeping it as a secret to themselves. Also the growing hostilities and tensions between the United States and Union of Soviet Socialist Republics (USSR) over territorial ambitions in Europe as well as “sphere of influence” sort of convinced the US government to keep such bomb in case if the Russians (The USSR) tried to push their luck too far. This was meant to be used as leverage for dealing with the Russians. In 1949, Russia developed and tested its own nuclear bomb, thus bringing them at par with the US. This development came as a rude shock not just to the US but the world as a whole. Thus the era of mutual hostilities and tensions between east and west came to be perpetuated and termed “Cold War”. With Russia having tested its own nuclear bomb, the era of nuclear proliferation was born. Other countries acquired and tested their own weapons either independently or with foreign assistance. Today, 9 countries are known to have publicly tested and admitted to having nuclear weapons. 5 countries out of the 9 in total are legally recognised as nuclear weapon states. A further 40 countries possess not only the technology to make a bomb but also possess the capability to quickly assemble one. This is the scenario the world is facing – that of nuclear weapons proliferation.

Early efforts at a worldwide non-proliferation drive started in 1953 with the atom for peace programme. But it was not until in 1957, when, in order to forestall the proliferation of nuclear weapons technology by too many states, the United States, Russia (The Soviet Union) and 22 other countries which possessed nuclear energy as well as the technology, signed and ratified the statute which created the International Atomic Energy Agency (IAEA) on July 27<sup>th</sup> of that year. The Agency was the direct result of US president Dwight Eisenhower’s dramatic proposals of December 8, 1953 when he made the famous “Atomic for peace” speech that year. But its objectives after 3 years of negotiation were somewhat more modestly phrased than the president’s original objective.<sup>iii</sup> With this Agency created, it had as its primary objective, the prevention of nuclear weapons proliferation by safeguarding fissile radioactive material as well as inspecting nuclear installations. This it did in a bid to forestall proliferation by seeing to it that fissile material and isotopes were not diverted for weapons making. In order to do this effectively, it had to be backed legally, not just with the consent of member countries. Thus came the Nuclear non-Proliferation Treaty (NPT) which provided legal backing for the IAEA to carry out its activities.

Both the IAEA and the NPT treaty were meant to start and carry out a regime of non-proliferation and both were primarily the ideas of the US, which was seriously seeking a way to prevent other countries, especially third world developing countries from either acquiring the bomb or the technology to make one. It is difficult and debatable also, to understand precisely why the Soviet Union, after subsequent bilateral exchange of notes, the UN General Assembly discussion and the multi-state meetings and conferences, eventually decided to participate in the creation of the Agency.<sup>iv</sup> The determination of the US to create the IAEA with or without the Soviet Union and to proceed on a parallel front with bilateral agreements, almost surely persuaded the Soviet Union that she could further her interest more effectively inside the organisation than outside.<sup>v</sup>

With the creation of the IAEA, the first step at curtailing nuclear proliferation was taken. With the signing and ratification of the NPT treaty began the non-proliferation regime as seen in the world today.

## 2.0 THEORETICAL FRAMEWORK

The theory on which this work stands is Deterrence Theory of War and Nuclear Weapons. The proponent of the theory was Huth. Deterrence theory is based upon the concept which can be defined as the use of threats by one party to convince another party to refrain from initiating some course of action.<sup>vi</sup> The doctrine gained increased prominence as a military strategy during the Cold War with regard to the use of nuclear weapons and is related to but distinct from the concept of mutual assured destruction, which models the preventative nature of full-scale nuclear attack that would devastate both parties in a nuclear war. Deterrence is a strategy intended to dissuade an adversary from taking an action that has not yet started by means of threat of reprisal, or to prevent it from doing something that another state desires. A threat serves as a deterrent to the extent that it convinces its target not to carry out the intended action because of the costs and losses that target would incur. In international security, a policy of deterrence generally refers to threats of military retaliation directed by the leaders of one state to the leaders of another in an attempt to prevent the other state from resorting to the use of military force in pursuit of its foreign policy goals.<sup>vii</sup>

A policy of deterrence can fit into two broad categories: preventing an armed attack against a state's own territory (known as direct deterrence) or preventing an armed attack against another state (known as extended deterrence). Situations of direct deterrence often occur if there is a territorial dispute between neighboring states in which major powers like the United States do not directly intervene. On the other hand, situations of extended deterrence often occur when a great power becomes involved. Building on the two broad categories, Huth goes on to outline that deterrence policy may be implemented in response to a pressing short-term threat (known as immediate deterrence) or as strategy to prevent a military conflict or short-term threat from arising (known as general deterrence).<sup>viii</sup>

A successful deterrence policy must be considered in military terms and also political terms: International relations, foreign policy and diplomacy. In military terms, deterrence success refers to preventing state leaders from issuing military threats and actions that escalate peacetime diplomatic and military co-operation into a crisis or militarised confrontation that threatens armed conflict and possibly war. The prevention of crises of wars, however, is not the only aim of deterrence. In addition, defending states must be able to resist the political and the military demands of a potential attacking nation. If armed conflict is avoided at the price of diplomatic concessions to the maximum demands of the potential attacking nation under the threat of war, it cannot be claimed that deterrence has succeeded.

Deterrence theory holds that nuclear weapons are intended to deter other states from attacking with their nuclear weapons, through the promise of retaliation and possibly mutually assured destruction. Nuclear deterrence can also be applied to an attack by conventional forces. For example, the doctrine of massive retaliation threatened to launch US nuclear weapons in response to Soviet attacks. A successful nuclear deterrent requires a country to preserve its ability to retaliate by responding before its own weapons are destroyed

or ensuring a second-strike capability. A nuclear deterrent is sometimes composed of a nuclear triad, as in the case of the nuclear weapons owned by the United States, Russia, the China and India. Other countries, such as the United Kingdom and France, have only sea-based and air-based nuclear weapons.

The Sino-Soviet border conflict provides important empirical evidence for re-examining theories of nuclear deterrence and crisis behaviour developed during the Cold War, and offers new insight and lessons for current and future nuclear challenges. Sino-Soviet border dispute sheds new light on the behaviour of new nuclear power, the behaviour of major nuclear powers towards new nuclear states, the dynamics of crises in vastly asymmetric nuclear relationships; and the role of strategic culture in deterrence behaviour.

## 2.1 The Aftermath of the Second World War

Nuclear energy and nuclear weapons started in 1945, precisely in August of that year. In August 1945, the United States dropped two atomic (nuclear) bombs on the two Japanese cities of Hiroshima and Nagasaki.<sup>ix</sup> The United States did this ostensibly to bring the 2nd World War to an end quickly as the war was dragging slowly in Asia pacific while it had ended in Europe, earlier in May. It is also believed in some quarters that the real purpose of the use of nuclear weapons against Japan by the US was in order to prevent Russia from declaring war on Japan in order to invade and occupy it. The Russians declared war against Japan any way in August 1945.<sup>x</sup>

Prior to this development, the nuclear age can be traced to the year 1938 when scientists in Nazi Germany split the nucleus of a uranium atom, releasing heat energy and radiation. They did this through a process called nuclear fission. Nuclear fission occurs when uranium atom are split (or fissioned) thereby releasing heat and energy. The nuclear weapons that were used against Japan were made using this process.<sup>xi</sup> The potential of nuclear fission to produce weapons of unparalleled power prompted a recent refugee from Germany-Albert Einstein – to alert the then US president Franklin D. Roosevelt about its potential. Albert Einstein wrote to the president saying, “The element uranium may be turned into a new and important source of energy in the future. This new phenomenon could lead to the construction of bombs... extremely powerful bombs of a new type”.<sup>xii</sup> After the United the race to beat Germany in developing atomic bomb accelerated under a secret US Army Corps of Engineers program known as the Manhattan project. The nuclear weapons that the US developed through the Manhattan Project are known as atomic or fission weapons.

By September 1944, after less than two years of work, the Manhattan project researchers and scientist had begun producing plutonium for nuclear weapons. On July 16 1945, they detonated an experimental atomic bomb known as “The Gadget from tower in the New Mexico desert. Less than three weeks later, on August 6, 1945, the United State dropped an atomic bomb on Hiroshima followed by another dropping of an atomic bomb on Nagasaki on August 9. Two days later, Japan surrendered. World War II was over and the atomic age had begun.<sup>xiii</sup> Within weeks of the bombings, the death toll had climbed to more than 100,000 people, mainly civilians.

The enormous loss of civilian lives sparked intense debate over the future of atomic weapons. Earnest international efforts to promote nuclear non-proliferation began in 1946. The United

States under president Harry S. Truman proposed that all materials used for nuclear weapons be placed under international control. this proposal came to be known as the Baruch plan. It was named after the US representative to the newly created United Nation Atomic Energy Commission (UNAEC), Bernard Baruch. The Baruch plan also proposed the verifiable dismantling and destruction of the US nuclear arsenal (which, at that time was the only country with a nuclear arsenal). After all government had successfully cooperated to accomplish two things:

1. The establishment of an International Atomic Development Authority, which would actually own and control all military applicable nuclear materials and activities, and
2. The creation of a system of automatic sanction, which not even the UN security council could veto and which would proportionately punish states attempting to acquire the capability to make nuclear weapons or fissile material.<sup>xiv</sup>

Although the Baruch plan enjoyed wide international support, it failed to emerge from the UNAEC because the Soviet Union rejected the proposal of the Baruch plan by vetoing it at the UN Security Council.

## 2.2 The Spread of Nuclear Weapons and the Arms Race (1949 – 1964)

The post-war deterioration of relations with the Soviet Union, especially since after the Yalta conference of February 1945 and disagreements on how the Soviet Union and its leader, Joseph Stalin were forcibly installing communist regimes in the countries of Eastern Europe, effectively ended the debate in the United State about the future of nuclear weapons. Disagreements over the future status of the German capital city, Berlin, which was occupied by the four allied powers – the United States, Britain, France and the Soviet Union, was one of the major reasons for the cold war. The Berlin Blockade of June 1948 between the two super powers became one of the first confrontational issues during the cold war. This crises prompted the administration of President Harry S, Truman to intensify the production of nuclear weapons, especially the next generation of more powerful thermonuclear weapons which unlike atomic weapons is more powerful and is made through nuclear fusion.

In September 1949, the Soviet Union conducted its first atomic weapons test.<sup>xv</sup> This came as a rude shock to both the US and the world as a whole. The rise of communism in China in 1949 followed by the outbreak of the Korean war the following year (1950 – 1953), fuelled US policy maker's support of their own nuclear weapons programme. Britain meanwhile tested her first atomic bomb in 1953. In 1960, France became the third country to acquire, develop and test its own atomic bomb. This was followed by China, which tested its own in 1964. The 1950s and 1960s in general witnessed the full scale escalation of the Cold War and it also witnessed the spread of nuclear weapons.<sup>xvi</sup> Thus began the weapons race which intensified and continued to intensify during the following decades. The two superpowers compared with each other in the development and stockpiling of not only nuclear weapons but also, other weapons of mass destruction like biological and chemical weapons.

With momentum building for still more nuclear research and the escalating arms race, calls to abandon the new technology ran into resistance from those promoting nuclear power as cheap, virtually inexhaustible source of energy. It became difficult for the policy makers of the two superpowers to abandon nuclear technology in the ensuing hostilities between them.

The first three decades of the cold war witnessed the rise and popularity of nuclear power. More so after the development and testing of nuclear weapons, the major powers vis-à-vis. The 5 permanent members of the United Nations Security Council continued to test and stockpile nuclear weapons for military purpose. They developed newer and more frightening, more deadly weapons with far more destructive power on an unimaginable scale. What was more; they built complex delivery system for those weapons. Such weapons were designed to be launched from one continent and hit targets on other continents. Their ranges exceeded 5,000 miles. This was the nuclear era where possession of nuclear weapons balanced power.

### 2.3 Secret Nuclear Activities

There are growing numbers of cases in which countries have pursued secret activities that violated the NPT and were not detected by the IAEA. In early 2002, for example, the international community first become aware that Iran was pursuing a major uranium enrichment programme, including pilot enrichment facilities, a gas centrifuge manufacturing plant, an early construction of a large scale enrichment plant<sup>xvii</sup> in 2004 Libya's secret acquisition of uranium gas and a portion of the equipment for a similar gas centrifuge facility was also revealed. Similarly in 2004, South Korea's previous experiment with laser isotope enrichment came to light. In that same year (August, 2004), South Korea announced that in 2000, the Korea Atomic Energy Research Institute had conducted uranium enrichment without the government's knowledge which should have been reported to the IAEA. It later emerged that experiments on uranium and plutonium separation had also taken place about 25 years ago. The IAEA Director General reported these findings to the Board of Governors in November 2004, expressing serious concern with the failure to report such undeclared activities, but underlining that there were no indications that these experiments had continued. The board shared the Director-Generals serious concerns with regard to failures to report information under South Korea's safeguards agreement with the IAEA.<sup>xviii</sup>

In a similar development, the Libya government in December 2003 informed the IAEA that it had been conducting a clandestine nuclear weapon acquisition programme and asked the Agency to verify its dismantlement. Later in February 2004, the IAEA Director General reported that Libya, over an extended period of time, had secretly pursued a nuclear weapons programme and had failed to report nuclear material, facilities and activities, including such related to uranium enrichment. He characterised Libya's breach of its safeguards obligations, and its acquisition of nuclear weapon design and fabrication documents as a matter of utmost concern. According to Libya, a foreign expert (A. Q. Khan) had helped the country gain experience in the design and operation of centrifuge equipment in the 1980s and in 1995 Libya made a strategic decision to pursue gas centrifuge enrichment technology.<sup>xix</sup> These clandestine activities of Libya have shown that the IAEA's analysis of Libya's nuclear programme had brought to light a covert network through which Libya and other states gained access to nuclear technology and know-how.

South Africa, also had a similar clandestine nuclear weapons programme which it built and developed between 1979 and 1989. It then dismantled and destroyed its nuclear weapons in 2002 after the US cancelled an earlier agreement in which the US agreed to supply oil as aid in return for North Korea's halting or freezing of its nuclear programme. When the IAEA and the rest of the international community became aware of its activities, it threatened to and did withdraw from NPT treaty.

### 3.0 CONCLUSION

The International Atomic Energy Agency (IAEA) has so far, been able to curtail the spread of nuclear weapons proliferation. Through its safeguards and verification programme, a lot of countries have abandoned the quest to acquire nuclear weapons. Many countries have instead opted to use nuclear power to generate electricity and for carrying out research on medical, agricultural and industrial uses. The Nuclear non-Proliferation Treaty (NPT) has achieved a lot in the fight against nuclear proliferation. The NPT is the most widely adhered to treaty in the world and this is significant because countries are bound by its provisions and thus are barred from manufacturing or acquiring nuclear weapons. Both the IAEA and the NPT through the cooperative effort of some countries notably the United States of America work hand in hand in order to achieve a proliferation free world.

The IAEA for its part will continue to fulfil its mandate of providing credible assurance to the international community that states are honouring their non-proliferation under takings, on the basis of the legal authority imparted through IAEA safeguard agreements and additional protocols. The effectiveness and efficiency of the strengthened safeguards system will surely continue to be put to the test, as the IAEA meets new verification challenges in the coming years.<sup>xx</sup>

Nuclear terrorism is a serious issue besides nuclear proliferation which needs to be tackled with a sense of urgency. Since the September, 11 attacks on the US on 2001, terrorists have sought to acquire nuclear weapons or the technological know-how needed to make a nuclear bomb. A grim scenario would be a terrorist organisation like Al-Quaeda and other such like-minded terrorist groups. Still, IAEA Director-General, Mohammed el Baradei paints a grim picture of the future of nuclear non-proliferation and calls for a revolutionary overhaul of international systems and policies to prevent nuclear terrorism.<sup>xxi</sup>

The IAEA and its efforts at nuclear non-proliferation need to be better supported and equipped to face the arduous challenge of keeping the world safe from nuclear weapons. Through mutual cooperation and dialogue, the IAEA would be in a better position to encourage countries to resist the temptation of making nuclear weapons in order to ensure global peace and security.

The IAEA could do better and achieve better results, if it is given the right kind of support and cooperation. Countries on their own or collectively with other countries can fight nuclear weapons proliferation outside of the IAEA. It is recommended that countries too can prevent nuclear weapons proliferation if they work collectively on their own and not necessarily have to wait for the IAEA. September 11 has given a new sense of urgency to a danger that the world has been concerned about for some time and in that sense it provides an opportunity. The scope of these attacks has underlined the need for countries and the IAEA to take vigorous action now to end the possibility that terrorist group or rogue states could launch even more devastating attacks in the future.<sup>xxii</sup>

Proliferation of nuclear weapons and missiles is an urgent and profound threat to the security of all states and it requires urgent action. Therefore the call for globalisation of worldwide security to prevent nuclear proliferation and terrorism cannot be overemphasised.

ENDNOTES

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