FIRAMUN '26

FIRA MODEL UNITED NATIONS CONFERANCE 2026

INTERNATIONAL ATOMIC ENERGY AGENCY

AGENDA ITEM:
DESIGNATING THE LINE BETWEEN NUCLEAR ENERGY RESEARCH AND NUCLEAR WEAPON DEVELOPMENT, DETERMINING FRAMEWORKS RECOMMENDING LIMITATIONS FOR BOTH TECHNOLOGIES.

UNDER SECRETARY GENERAL:

KUZEY KARLIK &
EGEMEN AYYILDIZ

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1. Letter from the Secretaries General

Dear Participants,

As the Secretaries-General of FIRAMUN'26, we are very happy to welcome you to Antalya for the first edition of our conference, which will take place from September 1st to September 3rd, 2026.

When we first started planning FIRAMUN'26, we had a simple goal: to organize a conference that we would enjoy attending ourselves. Since then, our executive, academic, and organization teams have spent months working on every part of the event. There have been long meetings, difficult decisions, last-minute changes, and a great deal of excitement. Now, we are finally ready to share the result with you.

During these three days, you will discuss real problems, defend your country's position, disagree with one another, and hopefully find solutions together. Some moments may be challenging, especially for those attending their first MUN conference. That is completely normal. Nobody enters their first committee knowing exactly what to say or when to speak. What matters is having the courage to participate.

For experienced delegates, we hope FIRAMUN'26 gives you something different to remember. For first-time delegates, we hope it becomes the beginning of a much longer MUN journey. Either way, do not spend the whole conference worrying about awards. Take the floor, meet the people around you, make mistakes, and enjoy the experience.

A conference is shaped by the people in its committee rooms. We have done our best to prepare those rooms for you. What happens inside them is now in your hands.

We hope you leave FIRAMUN'26 with good memories, new friends, and at least one story you will still be telling months later.

Lastly, we want to finish our letter with Father of Turks, our visionary Mustafa Kemal Atatürk's delightful phrase:

"You, the young people of the new Türkiye! Even if you grow exhausted, you will follow me. Those who resolve to keep walking without resting will never, ever grow tired."

Welcome to FIRAMUN'26. Requiem Aeternam!

Sincerely,

Baran İNCE & Doruk ŞENTÜRK
Secretaries-General of FIRAMUN'26

2. Letter from Under Secretaries Generals

Dear Delegates,

I would like to welcome you all to theInternational Atomic Energy Association! I am Kuzey Karlık, and it is my utmost pleasure to serve you as the Under Secretary General of this committee.

First, I would like to thank the executive team for granting me this opportunity in this marvelous conference. And I would like to thank my fellow Co-Under Secretary General Egemen Ayyıldız for his magnificent efforts and work ethic.

The study guide we wrote contains crucial information for this committee. Yet as its name states it's only a guide for you, so I am highly encouraging you to do your research properly, there will be a lot of debate points, disagreements and controversies hence you have to be ready.

I am sure this committee will be a blast, and I am looking forward to meeting you all on 1-3 September. If you have any questions you can always contact me through mail.

Sincerely,

Kuzey Karlık, Co-Under Secretary General of IAEA

kuzeykarlik@gmail.com

Dear delegates,

It's my absolute honour to be a part of this prestigious conference. My name is Egemen Ayyıldız, and I'll be serving as one of your USGs through our committee. I want to start my letter with overflowing thanks to my Co-USG, Kuzey, for giving me the chance to participate in this conference. He was the best academic partner I could ever ask for.

Now, while there's no doubt that we'll have a fruitful time, there are some crucial points you need to lay stress on. The first one being the study guide of ours. It's absolutely vital to read the study guide with excellent care and understand it. It will be our cornerstone to run the committee so by that means, please read it thoroughly. Another point being your attitude, it will be decisively important for the execution of our committee. Our committee relies on your efforts and knowledge suitable for this topic.

Last but not least, please be very eager to contact me on any questions you may have. I wish you the best luck out there.

Sincerely,

Egemen AYYILDIZ, Co-Under-Secretary General of IAEA

3. Introduction to the Committee

The International Atomic Energy Agency (IAEA) was established to promote the peaceful use of nuclear energy and ensure that such technology is not diverted for military purposes. Initiated in response to President Dwight D. Eisenhower's 1953 "Atoms for Peace" proposal, the IAEA officially began operations on July 29, 1957, following the unanimous approval of its founding statute by the United Nations General Assembly. The agency focuses on various aspects of nuclear technology, including safety, security, and verification, while providing technical assistance to nations developing nuclear programs for peaceful applications.

Operating from its temporary headquarters in Vienna, Austria, the IAEA is governed by a Board of Governors and a General Conference that includes representatives from member states. Over the years, the IAEA has evolved from an organization with 57 initial member countries to one with 143 members, reflecting a growing commitment to nuclear safety and non-proliferation. Among its significant initiatives, the IAEA has played a critical role in establishing international standards for radiation safety and has been involved in monitoring nuclear materials to prevent their use in weapons development.

The agency's efforts have been instrumental in contributing to global security, with its inspectors working worldwide to ensure compliance with the Nuclear Non-Proliferation Treaty (NPT). This treaty, adopted in 1968, solidified the IAEA's role in preventing the spread of nuclear weapons while facilitating access to nuclear technology for peaceful purposes. In recognition of its contributions to international peace and security, the IAEA was awarded the Nobel Peace Prize in 2005.

4. Nuclear Weaponry and Nuclear Energy

4.1. Nuclear Weaponry Methodology

Nuclear weapon, device designed to release energy in an explosive manner as a result of nuclear fission, nuclear fusion, or a combination of the two processes. Fission weapons are commonly referred to as atomic bombs. Fusion weapons are also referred to as thermonuclear bombs or, more commonly, hydrogen bombs; they are usually defined as nuclear weapons in which at least a portion of the energy is released by nuclear fusion.

All matter is composed of atoms: incredibly small structures that house different combinations of three particles, known as protons, neutrons, and electrons.

At the center of each atom is a "nucleus" (the plural of which is "nuclei"), where neutrons and protons are bound in proximity together. Most nuclei are relatively stable, meaning the makeup of their neutrons and protons is comparatively static and unchanging. During fission, the nuclei of certain heavy atoms split into smaller, lighter nuclei, releasing excess energy in the process. This can sometimes occur spontaneously, but can also, in certain nuclei, be induced from outside. If an unstable nucleus is hit by an outside neutron, it can cause the nucleus to split apart, or "fission." In some elements the fission process also releases even more neutrons, which can trigger a chain reaction if they're absorbed by nearby atoms. This is true for certain isotopes of uranium and plutonium. An isotope is a variation of the same element with different numbers of neutrons in the nucleus.

Fusion works in reverse: when exposed to extremely high temperatures and pressures, some lightweight nuclei can fuse to form heavier nuclei, releasing energy in the process.

In the case of modern nuclear weapons, which use both fission and fusion, a single warhead can release more explosive energy in a fraction of a second than all of the weapons used during World War II *combined* including Fat Man and Little Boy, the two atom bombs dropped on Japan.

All nuclear weapons use fission to generate an explosion. “Little Boy” the first nuclear weapon ever used during wartime worked by shooting a hollow uranium 235 cylinder at a target “plug” of the same material.

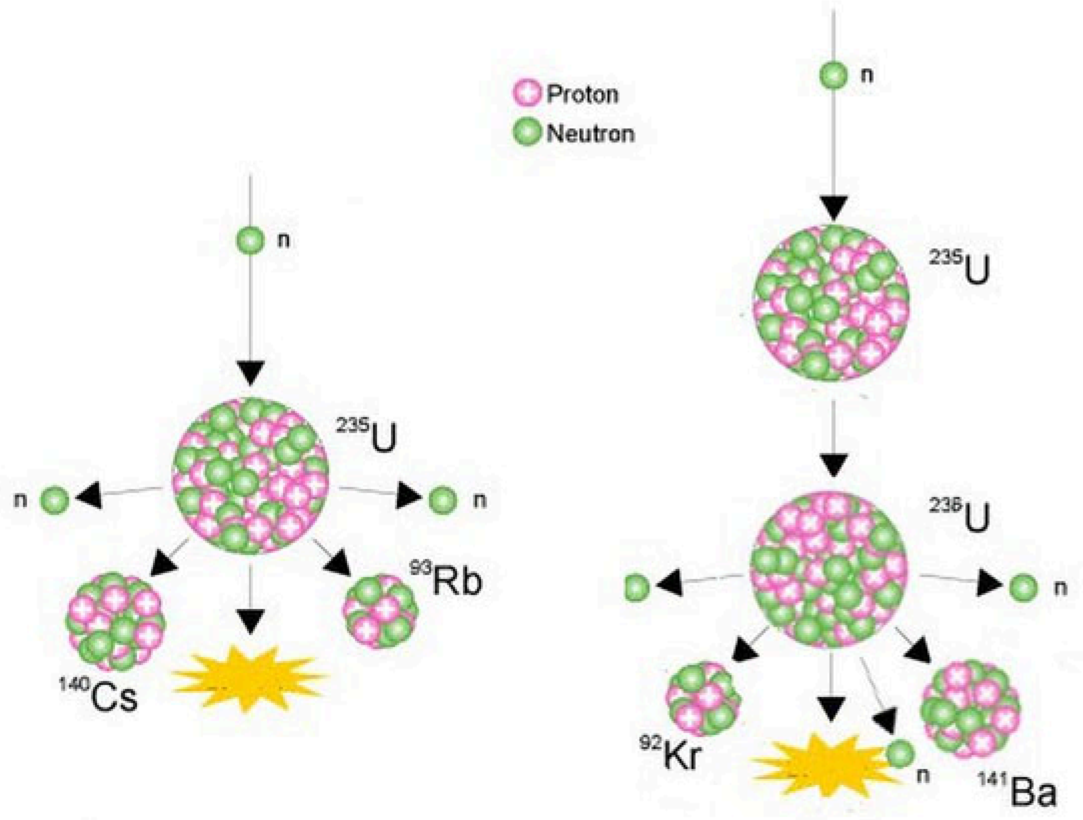
Each piece by itself was not enough to constitute a critical mass (the minimum amount of nuclear material needed to maintain fission) but by colliding the pieces, critical mass was reached and a fission chain reaction occurred.

Modern nuclear weapons work slightly differently. Critical mass depends on the density of the material: as the density *in*creases, the critical mass *de*creases. Instead of colliding two sub critical pieces of nuclear fuel, modern weapons detonate chemical explosives around a sub critical sphere of uranium 235 or plutonium 239 metal. The force from the blast is directed inward, compressing the pit and bringing its atoms closer together. Once dense enough to reach the critical mass, neutrons are injected, initiating a fission chain reaction and producing an atomic explosion.

In fusion weapons (also called “thermonuclear” or “hydrogen” weapons), the energy from an initial fission explosion is used to “fuse” hydrogen isotopes together. The energy released by the weapon creates a fireball that reaches several tens of million degrees in temperatures in the same range as the center of the sun (which also runs on fusion).

Nuclear weapons produce enormous explosive energy. Their significance may best be appreciated by the coining of the words *kiloton* (1,000 tons) and *megaton* (1,000,000 tons) to describe their blast energy in equivalent weights of the conventional chemical explosive TNT. For example, the atomic bomb dropped on Hiroshima, Japan, in 1945, containing only about 64 kg (140 pounds) of highly enriched uranium, released energy equaling about 15 kilotons of chemical explosive. That blast immediately produced a strong shock wave, enormous amounts of heat, and lethal ionizing radiation. Convection currents created by the explosion drew dust and other debris into the air, creating the mushroom-shaped cloud that has since become the virtual signature of a nuclear explosion. In addition, radioactive debris was carried by winds high into the atmosphere, later to settle to Earth as radioactive fallout. The enormous toll in destruction, death, injury, and sickness produced by the explosions at Hiroshima and, three days later, at Nagasaki was on a scale never before produced by any single weapon. In the decades since 1945, even as many countries have developed nuclear weapons of far greater strength than those used against the Japanese cities, concerns about the dreadful effects of such weapons have driven governments to negotiate arms control agreements, such as the Nuclear Test-Ban Treaty of 1963 and the Treaty on the Non-proliferation of Nuclear Weapons of 1968. Among military strategists and planners, the very presence of these weapons of unparalleled destructive power has created a distinct discipline, with its own internal logic and set of doctrines, known as nuclear strategy.

The first nuclear weapons were bombs delivered by aircraft. Later, warheads were developed for strategic ballistic missiles, which have become by far the most important nuclear weapons. Smaller tactical nuclear weapons have also been developed, including ones for artillery projectiles, land mines, antisubmarine depth charges, torpedoes, and shorter-range ballistic and cruise missiles.



By far the greatest force driving the development of nuclear weapons after World War II (though not by any means the only force) was the Cold War confrontation that pitted the United States and its allies against the Soviet Union and its satellite states. During this period, which lasted roughly from 1945 to 1991, the American stockpile of nuclear weapons reached its peak in 1966, with more than 32,000 warheads of 30 different types. During the 1990s, following the dissolution of the Soviet Union and the end of the Cold War, many types of tactical and strategic weapons were retired and dismantled to comply with arms control negotiations, such as the Strategic Arms Reduction Talks, or as unilateral initiatives. By 2010 the United States had approximately 9,400 warheads of nine types, including two types of bombs, three types for intercontinental ballistic missiles (ICBMs), two types for submarine-launched ballistic missiles (SLBMs), and two types for cruise missiles. Some types existed in several modifications. Of these 9,400 warheads, an estimated 2,468 were operational (that is, mated to a delivery system such as a missile); the rest were either spares held in reserve or retired warheads scheduled to be dismantled. Of the 2,468 operational warheads, approximately 1,968 were deployed on strategic (long-range) delivery systems, and some 500 were deployed on nonstrategic (short-range) systems. Of the 500 nonstrategic warheads in the U.S. arsenal, about 200 were deployed in Europe.

The Soviet nuclear stockpile reached its peak of about 33,000 operational warheads in 1988, with an additional 10,000 previously deployed warheads that had been retired but had not been taken apart. After the disintegration of the Soviet Union, Russia accelerated its warhead dismantlement program, but the status of many of the 12,000 warheads estimated to remain in its stockpile in 2010 was unclear. Given limited Russian resources and lack of legitimate military missions, only about 4,600 of these 12,000 warheads were serviceable and maintained enough to be deployed. Of the 4,600 operational warheads, some 2,600 were deployed on strategic systems and some 2,000 on nonstrategic systems. A global security concern is the safety of Russia's intact warheads and the security of nuclear materials removed from dismantled warheads.

Beginning in the 1990s, the arsenals of the United Kingdom, France, and China also underwent significant change and consolidation. Britain eliminated its land-based army, tactical naval, and air nuclear missions, so that its arsenal, which contained some 350 warheads in the 1970s, had just 225 warheads in 2010. Of these, fewer than 160 were operational, all on its ballistic missile submarine fleet. Meanwhile, France reduced its arsenal from some 540 operational warheads at the end of the Cold War to about 300 in 2010, eliminating several types of nuclear weapon systems. The Chinese stockpile remained fairly steady during the 1990s and then started to grow at the beginning of the 21st century. By 2010 China had about 240 warheads in its stockpile, some 180 of them operational and the rest in reserve or retirement.

Israel maintained an undeclared nuclear stockpile of 60 to 80 warheads, but any developments were kept highly secret. India was estimated to have 60 to 80 assembled warheads and Pakistan about 70 to 90. Most of India's and Pakistan's warheads were thought not to be operational, though both countries—rivals in the incipient arms race on the Indian subcontinent—were thought to be increasing their stockpiles. North Korea, which joined the nuclear club in 2006, may have produced enough plutonium by 2010 for as many as 8 to 12 warheads, though it was not clear that any of these was operational.

4.2. Nuclear Energy Methodology

Nuclear energy provides efficient and reliable electricity around the world. Today, more than 413 commercial reactors operate in more than 31 countries.

The common definition for nuclear energy is the energy released by a chain reaction, especially by fission or fusion. Practically speaking, nuclear energy uses fuel made from mined and processed uranium to make steam and generate electricity.

Nuclear energy is the only source of electricity that can produce a constant supply of power known as baseload power reliably without emitting greenhouse gases. Nuclear energy has one of the lowest environmental impacts on land and natural resources of any electricity source.

Usual working method of nuclear reactors works as:

Uranium is mined and converted into a fuel bundle. Operators load these fuel bundles into a nuclear reactor.

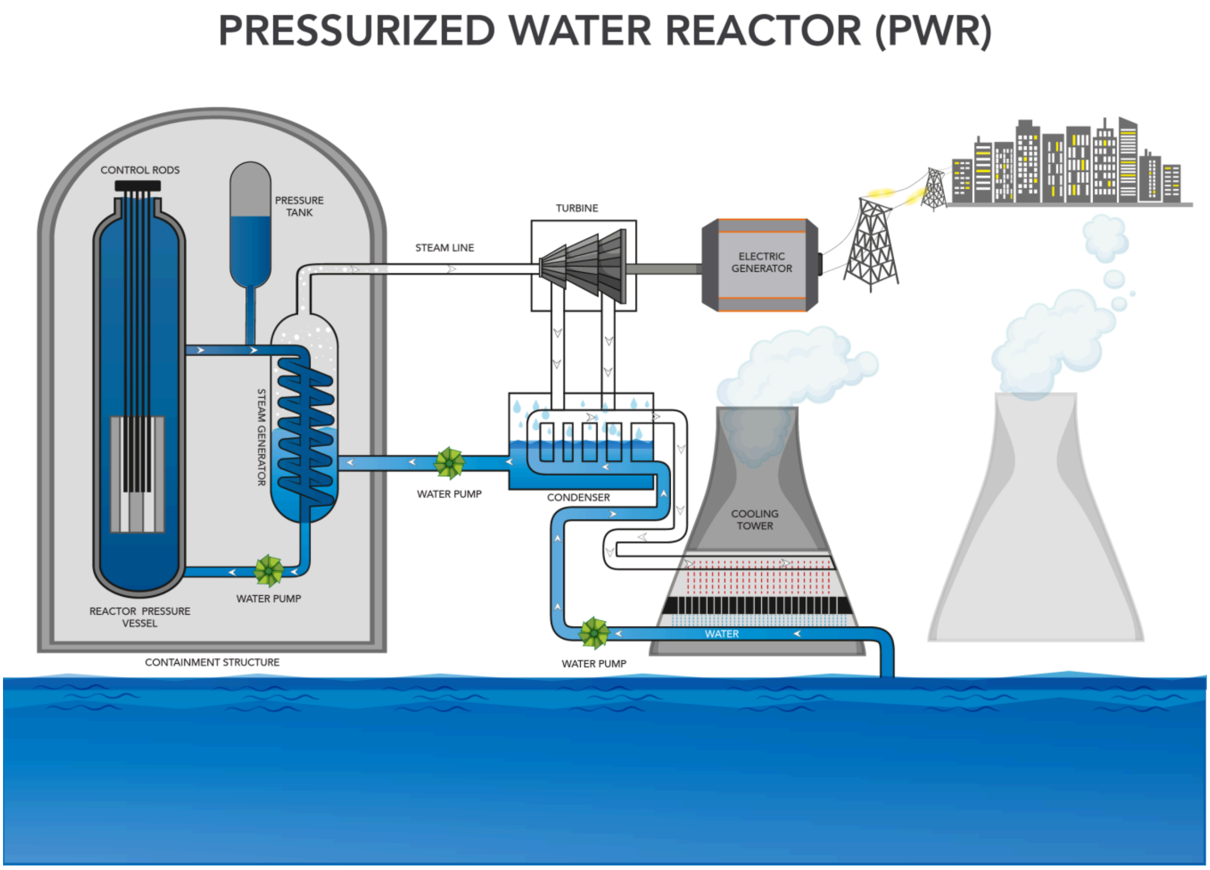
Slow-moving neutrons split apart the **uranium nuclei**, initiating a nuclear chain reaction. This reaction continues due to careful engineering and can be stopped at any time by personnel working at the plant.

The neutrons released from splitting the uranium nucleus travel very quickly, near the speed of light. Slow neutrons are most effective for splitting uranium atoms. The nuclear reactor contains a special material called a **moderator that slows down neutrons**. While many materials can act as a moderator, many reactors use special heavy water, which is H_2O with the normal hydrogen replaced by a heavier form of hydrogen called **deuterium**. Nuclear professionals working at the reactor control the reactions by moving **control rods** in and out of the reactor core. These rods are made of materials that absorb neutrons to slow or stop fission as needed.

To turn that heat into practical work (and then electricity), a **coolant** circulates through the reactor core to cool it down.

That reaction turns water into high-pressure steam. The pressure pushes the steam to turn **turbines**.

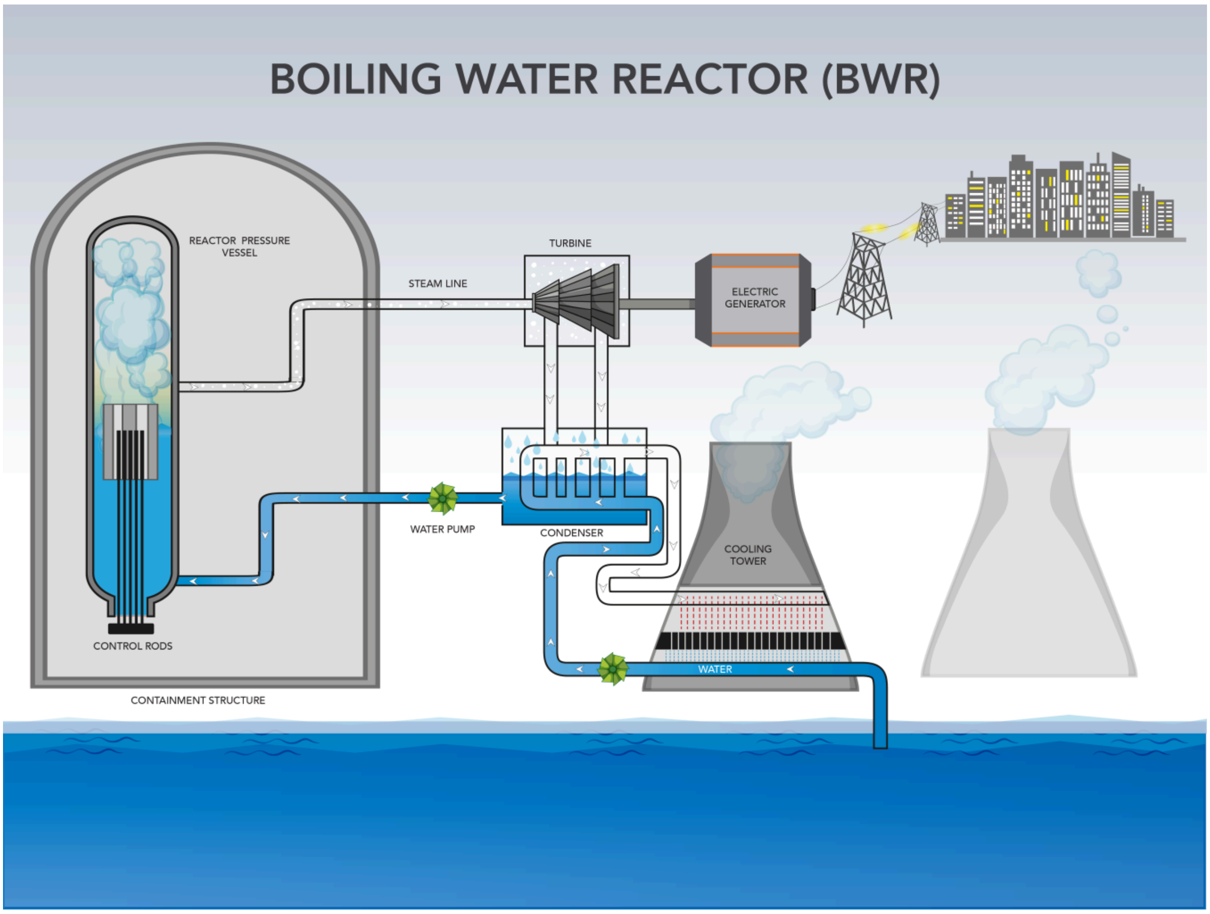
The energy of the spinning turbines is converted into electricity by the movement of magnets within the electrical generator.



More than 65% of the commercial reactors in the United States are pressurized-water reactors or PWRs. These reactors pump water into the reactor core under high pressure to prevent the water from boiling.

The water in the core is heated by nuclear fission and then pumped into tubes inside a heat exchanger. Those tubes heat a separate water source to create steam. The steam then turns an electric generator to produce electricity.

The core water cycles back to the reactor to be reheated and the process is repeated.



Roughly a third of the reactors operating in the United States are boiling water reactors (BWRs).

BWRs heat water and produce steam directly inside the reactor vessel. Water is pumped up through the reactor core and heated by fission. Pipes then feed the steam directly to a turbine to produce electricity.

The unused steam is then condensed back to water and reused in the heating process.

4.3. Effects of Nuclear Usage

Nuclear weapons are fundamentally different from conventional weapons because of the vast amounts of explosive energy they can release and the kinds of effects they produce, such as high temperatures and radiation. The prompt effects of a nuclear explosion and fallout are well known through data gathered from the attacks on Hiroshima and Nagasaki in Japan; from more than 500 atmospheric and more than 1,500 underground nuclear tests conducted worldwide; and from extensive calculations and computer modeling. Longer-term effects on human health and the environment are less certain but have been extensively studied. The impacts of a nuclear explosion depend on many factors, including the design of the weapon (fission or fusion) and its yield; whether the detonation takes place in the air (and at what altitude), on the surface, underground, or underwater; the meteorological and environmental conditions; and whether the target is urban, rural, or military.

When a nuclear weapon detonates, a fireball occurs with temperatures similar to those at the center of the Sun. The energy emitted takes several forms. Approximately 85 percent of the explosive energy produces air blast (and shock) and thermal radiation (heat). The remaining 15 percent is released as initial radiation, produced within the first minute or so, and residual (or delayed) radiation, emitted over a period of time, some of which can be in the form of local fallout.

4.3.1. Effects of Nuclear Weaponry

The expansion of intensely hot gases at extremely high pressures in a nuclear fireball generates a shock wave that expands outward at high velocity. The “overpressure,” or crushing pressure, at the front of the shock wave can be measured in pascals (or kilopascals; kPa) or in pounds per square inch (psi). The greater the overpressure, the more likely that a given structure will be damaged by the sudden impact of the wave front. A related destructive effect comes from the “dynamic pressure,” or high-velocity wind, that accompanies the shock wave. An ordinary two-story, wood-frame house will collapse at an overpressure of 34.5 kPa. A one-megaton weapon exploded at an altitude of 3,000 meters will generate overpressure of this magnitude out to 7 km from the point of detonation. The winds that follow will hurl a standing person against a wall with several times the force of gravity. Within 8 km few people in the open or in ordinary buildings will likely be able to survive such a blast. Enormous amounts of masonry, glass, wood, metal, and other debris created by the initial shock wave will fly at velocities above 160 km per hour, causing further destruction.

Thermal radiation

As a rule of thumb, approximately 35 percent of the total energy yield of an airburst is emitted as thermal radiation, light and heat capable of causing skin burns and eye injuries and starting fires of combustible material at considerable distances. The shock wave, arriving later, may spread fires further. If the individual fires are extensive enough, they can coalesce into a mass fire known as a firestorm, generating a single convective column of rising hot gases that sucks in fresh air from the periphery. The inward-rushing winds and the extremely high temperatures generated in a firestorm consume virtually everything combustible. At Hiroshima the incendiary effects were quite different from those at Nagasaki, in part because of differences in terrain. The firestorm that raged over the level terrain of Hiroshima left 11.4 square km severely damaged, roughly four times the area burned in the hilly terrain of Nagasaki.

Initial radiation

A special feature of a nuclear explosion is the emission of nuclear radiation, which may be separated into initial radiation and residual radiation. Initial radiation, also known as prompt radiation, consists of gamma rays and neutrons produced within a minute of the detonation. Beta particles (free electrons) and a small proportion of alpha particles (helium nuclei) are also produced, but these particles have short ranges and typically will not reach Earth's surface if the weapon is detonated high enough above ground. Gamma rays and neutrons can produce harmful effects in living organisms, a hazard that persists over considerable distances because of their ability to penetrate most structures. Though their energy is only about 3 percent of the total released in a nuclear explosion, they can cause a considerable proportion of the casualties.

Residual radiation and fallout

Residual radiation is defined as radiation emitted more than one minute after the detonation. If the fission explosion is an airburst, the residual radiation will come mainly from the weapon debris. If the explosion is on or near the surface, the soil, water, and other materials in the vicinity will be sucked upward by the rising cloud, causing early (local) and delayed (worldwide) fallout. Early fallout settles to the ground during the first 24 hours; it may contaminate large areas and be an immediate and extreme biological hazard. Delayed fallout, which arrives after the first day, consists of microscopic particles that are dispersed by prevailing winds and settle in low concentrations over possibly extensive portions of Earth's surface.

A nuclear explosion produces a complex mix of more than 300 different isotopes of dozens of elements, with half-lifes from fractions of a second to millions of years. The total radioactivity of the fission products is extremely large at first, but it falls off at a fairly rapid rate as a result of radioactive decay. Seven hours after a nuclear explosion, residual radioactivity will have decreased to about 10 percent of its amount at 1 hour, and after another 48 hours it will have decreased to 1 percent. (The rule of thumb is that for every sevenfold increase in time after the explosion, the radiation dose rate decreases by a factor of 10.)

Electromagnetic pulse

A nuclear electromagnetic pulse (EMP) is the time-varying electromagnetic radiation resulting from a nuclear explosion. The development of the EMP is shaped by the initial nuclear radiation from the explosion—specifically, the gamma radiation. High-energy electrons are produced in the environment of the explosion when gamma rays collide with air molecules (a process called the Compton effect). Positive and negative charges in the atmosphere are separated as the lighter, negatively charged electrons are swept away from the explosion point and the heavier, positively charged ionized air molecules are left behind. This charge separation produces a large electric field. Asymmetries in the electric field are caused by factors such as the variation in air density with altitude and the proximity of the explosion to Earth's surface. These asymmetries result in time-varying electrical currents that produce the EMP. The characteristics of the EMP depend strongly on the height of the explosion above the surface.

MP was first noticed in the United States in the 1950s when electronic equipment failed because of induced currents and voltages during some nuclear tests. In 1960 the potential vulnerability of American military equipment and weapons systems to EMP was officially recognized. EMP can damage unprotected electronic equipment, such as radios, radars, televisions, telephones, computers, and other communication equipment and systems. EMP damage can occur at distances of tens, hundreds, or thousands of kilometers from a nuclear explosion, depending on the weapon yield and the altitude of the detonation. For example, in 1962 a failure of electronic components in street lights in Hawaii and activation of numerous automobile burglar alarms in Honolulu were attributed to a high-altitude U.S. nuclear test at Johnston Atoll, some 1,300 km to the southwest. For a high-yield explosion of approximately 10 megatons detonated 320 km above the center of the continental United States, almost the entire country, as well as parts of Mexico and Canada, would be affected by EMP. Procedures to improve the ability of networks, especially military command and control systems, to withstand EMP are known as "hardening."

4.3.2. Effects of Nuclear Energy

Waste

The final disposal of nuclear waste poses major challenges to governments worldwide. No country has a final disposal site for nuclear waste in operation yet; Finland is the only country that is currently constructing a permanent repository. Most countries have yet to develop and implement a functioning waste management strategy for all kinds of nuclear waste. Governments differ widely on their nuclear waste approaches: in trying to find a final repository, how to classify nuclear waste, which safety standards to require from operators, and how to secure funding for the ever-growing costs to pay for all of this.

With reactors across the world approaching the end of their lives, decommissioning and dismantling of nuclear power plants will become increasingly important. This process will produce even more radioactive waste. In absence of final disposal sites, most of the high-level waste and spent nuclear fuel must be stored for many decades, challenging the

safety requirements for storage facilities and causing much higher costs than previously estimated.
First we will need to look at how radioactive waste is created. The fuel goes into a reactor, where it typically lasts for four and a half to six years. Upon removal, the bundles look the same, rather like a flashlight battery looks the same after its battery is fully run down. Inside the long, thin metal tubes, the ceramic has often broken up, but like a broken coffee mug, it's still solid.

But also, like a battery in a flashlight, the chemical makeup of the fuel is altered. As the reactor runs, it splits a small fraction of the uranium atoms, creating fragments that are unstable. They return to stability by giving off a particle or an energy wave, i.e., radiation. Some of the fragments go through several steps, morphing from one unstable form to another until they reach stability.

A reactor also creates new elements by planting one or more stray neutrons in some of the uranium atoms, which results in radioactive "transuranic" elements, of which plutonium is the most common. Some of that plutonium is also split, but a lot remains in the reactor.

Some radioactive atoms return to stability in a few seconds or a few minutes, some in decades, and some in millennia. The transuranics are in the millennia category. The longevity of radioactive materials is measured by the time it takes half the atoms in a sample to degrade to another form is called a "half-life." (Sometimes, the radioactive atom degrades into a harmless stable form; sometimes, it changes into another radioactive element, which has its own half-life, and will degrade yet again, in a long chain of events.)

"Half-life" is a term in common use, but it is widely misunderstood. Intuitively, it might seem like a long half-life would be a bad thing, but short half-lives are actually the hardest to handle in fuel when it is removed from a reactor. Materials with short half-lives are extremely radioactive but reach stability quickly. Materials with a long half-life, like plutonium, are barely radioactive, but continue emitting radiation for extended periods.

Low-level wastes, generally defined as radioactive wastes other than high-level and wastes from uranium recovery operations, are commonly disposed of in near-surface facilities rather than in a geologic repository. There is no intent to recover the wastes once they are disposed of.

Low-level waste includes items that have become contaminated with radioactive material or have become radioactive through exposure to neutron radiation. This waste typically consists of contaminated protective shoe covers and clothing, wiping rags, mops, filters, reactor water treatment residues, equipment and tools, luminous dials, medical tubes, swabs, injection needles, syringes, and laboratory animal carcasses and tissues. The radioactivity can range from just above background levels found in nature to much higher levels in certain cases such as parts from inside the reactor vessel in a nuclear power plant.

Low-level waste is typically stored on-site by licensees, either until it has decayed away and can be disposed of as ordinary trash, or until amounts are large enough for shipment to a low-level waste disposal site in approved containers.

High-level radioactive waste primarily is uranium fuel that has been used in a nuclear power reactor and is "spent," or no longer efficient in producing electricity. Spent fuel is thermally hot as well as highly radioactive and requires remote handling and shielding. Nuclear reactor fuel contains ceramic pellets of uranium 235 inside of metal rods. Before these fuel rods are used, they are only slightly radioactive and may be handled without special shielding.

During the fission process, two things happen to the uranium in the fuel. First, uranium atoms split, creating energy that is used to produce electricity. The fission creates radioactive isotopes of lighter elements such as cesium-137 and strontium-90. These isotopes, called "fission products," account for most of the heat and penetrating radiation in high-level waste. Second, some uranium atoms capture neutrons produced during fission. These atoms form heavier elements such as plutonium. These heavier-than-uranium, or "transuranic," elements do not produce nearly the amount of heat or penetrating radiation that fission products do, but they take much longer to decay. Transuranic wastes, sometimes called TRU, account for most of the radioactive hazard remaining in high-level waste after 1,000 years.

Radioactive isotopes eventually decay, or disintegrate, to harmless materials. Some isotopes decay in hours or even minutes, but others decay very slowly. Strontium-90 and cesium-137 have half-lives of about 30 years (half the radioactivity will decay in 30 years). Plutonium-239 has a half-life of 24,000 years.

High-level wastes are hazardous because they produce fatal radiation doses during short periods of direct exposure. For example, 10 years after removal from a reactor, the surface dose rate for a typical spent fuel assembly exceeds 10,000 rem/hour – far greater than the fatal whole-body dose for humans of about 500 rem received all at once. If isotopes from these high-level wastes get into groundwater or rivers, they may enter food chains. The dose produced through this indirect exposure would be much smaller than a direct-exposure dose, but a much larger population could be exposed.

Reprocessing separates residual uranium and plutonium from the fission products. The uranium and plutonium can be used again as fuel. Most of the high-level waste (other than spent fuel) generated over the last 35 years has come from reprocessing fuel from government-owned plutonium production reactors and from naval, research and test reactors. A small amount of liquid high-level waste was generated from reprocessing commercial power reactor fuel in the 1960s and early 1970s.

Extreme Events

Most nuclear reactors are not designed for extreme events, like aerial bombing, missile strikes, or being crashed into by an aeroplane. These activities could break the containment building and destroy the reactor causing a meltdown of the reactor core. However, most reactors are protected by thick concrete and steel containment structures but the necessary surrounding areas, which may include spent fuel pools, cooling equipment, fire suppression equipment and more, may not be.

Some researchers suggest that the release of Cesium-137 from spent fuel pool fires would be potentially much larger than from reactor accidents, such as occurred during the Chernobyl and Fukushima accidents. Those accidents forced the evacuation of more than 100,000 in Ukraine and 160,000 in Japan. Exposure to Cesium- 137 can cause burns, acute radiation sickness and death. Spent fuel pools are often densely packed, which greatly increases the chances for a hydrogen explosion if they lose cooling and catch fire. One of the world's first nuclear power station accidents at Windscale (now Sellafield) in the UK occurred when one of two graphite reactors caught fire in 1957. Iodine–131 and Polonium-210 were released and fallout spread across the UK and Europe. Iodine-131 can cause thyroid cancer and Polonium-210 is highly toxic to human life.

Nuclear power plants under construction have been attacked a number of times throughout history. For example, power plants under construction in Iran were repeatedly bombed from the air by Iraq in the period 1984-1987. Yugoslav Air Force fighters made a threatening overpass of the Krsko nuclear plant in Slovenia -- which was operating at the time -- a few days after Slovenia declared independence in 1991. So-called research reactors in Iraq were destroyed by aerial bombing by Israel in 1981 and by the United States in 1991. Bombs damaged reactors under construction in Spain in 1977 and in South Africa in 1982. Anti-tank missiles struck a nuclear plant under construction in France in 1982.

5. Line Between Nuclear Energy and Nuclear Weaponry

Both uses of nuclear fission being weaponry and energy trace their roots back to the Chicago Pile-1 reactor. On December 2, 1942, the experiment directed by Nobel Prize-winning scientist Enrico Fermi achieved the world’s first self-sustaining, controlled nuclear chain reaction at the University of Chicago’s football stadium. From there, plans for harnessing the power of the atom split into two simultaneous paths separate, but linked by fundamental physics. One, led by Oppenheimer, sought to create a weapon that would bring a swift end to World War II. The other chased a different dream: using the immense potential energy stored in uranium to supply the nation with clean and reliable atomic power and to propel naval vessels for long stretches at sea without refueling.

Even as the Manhattan Project pursued its goal of creating a nuclear weapon under a veil of secrecy, research on reactors for commercial energy production and naval vessels forged ahead.

In the years following World War II, Argonne National Laboratory built the world’s first power reactor called EBR-1 in Idaho and generated the first electricity in December 1951. The site is now part of Idaho National Laboratory. The world's first nuclear powered submarine, the USS Nautilus (SSN-571), was launched in January 1954.

A nuclear bomb is designed to release as much energy as possible in the blink of an eye. A commercial nuclear reactor’s function is *precisely* the opposite.

Reactors are designed from the ground up to achieve a steady, controlled release of heat from fission that can be used to generate electricity over a long duration — years or even decades.

Every single piece of a reactor works toward that goal.

The fuel design and the control rods limit the intensity of the nuclear reaction, the cooling system removes heat to produce electricity, and containment structures ensure the integrity of the reactor for years on end. While modern nuclear weapons have incorporated many safety features over the years, they are nothing like these.

Nearly all of the uranium mined from the earth is the isotope U-238. Enrichment essentially means removing some of the U-238 so that the remaining uranium has a higher concentration of the less common but more reactive isotope, U-235.

Commercial nuclear power plants use just a small percentage of enriched uranium (roughly three to five percent) to sustain a nuclear chain reaction. That fuel is also processed into ceramic pellets, then stacked into sealed metal tubes to make fuel rods.

Nuclear weapons, on the other hand, use much higher quantities of enriched uranium (over 90 percent) or plutonium in a concentrated form to achieve their explosive end.

Some advanced reactor designs being developed require high-assay low-enriched uranium (HALEU) to achieve smaller cores and higher efficiencies. This fuel is enriched between 5 and 20 percent, well below the threshold needed for weapons-grade material.

Even though they have many differences, nuclear weapons and nuclear power share several common features and there is a danger that having more nuclear power stations in the world could mean more nuclear weapons.

The long list of links includes their histories, similar technologies, skills, health and safety aspects, regulatory issues and radiological research and development. For example, the process of enriching uranium to make it into fuel for nuclear power stations is also used to make nuclear weapons. Plutonium is a by-product of the nuclear fuel cycle and is still used by some countries to make nuclear weapons.

There is a danger that more nuclear power stations in the world could mean more nuclear weapons. Because countries like the UK are promoting the expansion of nuclear power, other countries are beginning to plan for their own nuclear power programmes too. But there is always the danger that countries acquiring nuclear power technology may subvert its use to develop a nuclear weapons programme. After all, the UK's first nuclear power stations were built primarily to provide fissile material for nuclear weapons during the Cold War. Nuclear materials may also get into the wrong hands and be used to make a crude nuclear device or a so-called 'dirty bomb'.

Some radioactive materials (such as plutonium-239 and uranium-235) spontaneously fission in the right configuration. That is, their nuclei split apart giving off very large amounts of energy. Inside a warhead, trillions of such fissions occur inside a small space within a fraction of a second, resulting in a massive explosion. Inside a nuclear reactor, the fissions are slower and more spread out, and the resulting heat is used to boil water, to make steam, to turn turbines which generate electricity.

However, the prime use of plutonium-239 and uranium-235, and the reason they were produced in the first place, is to make nuclear weapons.

Nuclear reactors are initially fuelled by uranium (usually in the form of metal-clad rods). Uranium is a naturally-occurring element like silver or iron and is mined from the earth. Plutonium is an artificial element created by the process of neutron activation in a reactor.

Nuclear secrecy

The connections between nuclear power and nuclear weapons have always been very close and are largely kept secret. Most governments take great pains to keep their connections well hidden.

The civil nuclear power industry grew out of the atomic bomb programme in the 1940s and the 1950s. In Britain, the civil nuclear power programme was deliberately used as a cover for military activities.

Military nuclear activities have always been kept secret, so the nuclear power industry's habit of hiding things from the public was established right at its beginning, due to its close connections with military weapons. For example, the atomic weapons facilities at Aldermaston and Burghfield in Berkshire, where British nuclear weapons are built and serviced, are still deleted from Ordnance Survey maps, leaving blank spaces.

It was under the misleading slogan of 'Atoms for Peace', that the Queen ceremonially opened what was officially described as Britain's first nuclear power station, at Calder Hall in Cumbria, in 1956. The newsreel commentary described how it would produce cheap and clean nuclear energy for everyone.

This was untrue. Calder Hall was not a civil power station. It was built primarily to produce plutonium for nuclear weapons. The electricity it produced was a by-product to power the rest of the site.

5.1. Historical Precautions

5.1.1. The Franck Report

Two months before Hiroshima, in June 1945, a group of scientists from the University of Chicago's Metallurgical Laboratory, part of the Manhattan Project, produced a bold and urgent document: the Franck Report. The report argued against the use of atomic bombs on Japan. It marked one of the earliest organized efforts by scientists to influence global nuclear policy.

A part of the Franck Report reads as:

"The development of nuclear power not only constitutes an important addition to the technological and military power of the United States, but also creates grave political and economic problems for the future of this country.

Nuclear bombs cannot possibly remain a "secret weapon" at the exclusive disposal of this country, for more than a few years. The scientific facts on which their construction is based are well known to scientists of other countries. Unless an effective international control of nuclear explosives is instituted, a race of nuclear armaments is certain to ensue following the first revelation of our possession of nuclear weapons to the world. Within ten years other countries may have nuclear bombs, each of which, weighing less than a ton, could destroy an urban area of more than ten square miles. In the war to which such an armaments race is likely to lead, the United States, with its agglomeration of population and industry in comparatively few metropolitan districts, will be at a disadvantage compared to the nations whose population and industry are scattered over large areas."

(http://hf.nuclearmuseum.org/ahf/key-documents/franck-report/)

5.1.2. The Nuclear Non-Proliferation Treaty

The Nuclear Non-Proliferation Treaty was an agreement signed in 1968 by several of the major nuclear and non-nuclear powers that pledged their cooperation in stemming the spread of nuclear technology. Although the NPT did not ultimately prevent nuclear proliferation, in the context of the Cold War arms race and mounting international concern about the consequences of nuclear war, the treaty was a major success for advocates of arms control because it set a precedent for international cooperation between nuclear and non-nuclear states to prevent proliferation.

By the beginning of the 1960s, nuclear weapons technology had the potential to become widespread. The science of exploding and fusing atoms had entered into public literature via academic journals, and nuclear technology was no longer pursued only by governments, but by private companies as well. Plutonium, the core of nuclear weapons, was becoming easier to obtain and cheaper to process. As a result of these changes, by 1964 there were five nuclear powers in the world: in addition to the United States, the Soviet Union, and the United Kingdom, all of which obtained nuclear capability during or shortly after the Second World War, France exploded its first nuclear bomb in 1960, and the People's Republic of China was not far behind in 1964. There were many other countries that had not yet tested weapons, but which were technologically advanced enough that should they decide to build them, it was likely that they could do so before long.

The spread of nuclear weapons technology meant several things for international lawmakers. While the only countries that were capable of nuclear strike were the United States, its close ally Britain, and the Soviet Union, the doctrine of deterrence could be reasonably maintained. Because both sides of the Cold War had vast stocks of weapons and the capability of striking back after being attacked, any strike would likely have led to mutually assured destruction, and thus there remained a strong incentive for any power to avoid starting a nuclear war. However, if more nations, particularly developing nations that lay on the periphery of the balance of power between the two Cold War superpowers, achieved nuclear capability, this balance risked being disrupted and the system of deterrence would be threatened. Moreover, if countries with volatile border disputes became capable of attacking with nuclear weapons, then the odds of a nuclear war with truly global repercussions increased. This also caused the nuclear states to hesitate in sharing nuclear technology with developing nations, even technology that could be used for peaceful applications. All of these concerns led to international interest in a nuclear non-proliferation treaty that would help prevent the spread of nuclear weapons.

Although the benefits to be derived from such a treaty were clear, its development was not without controversy. A ban on the distribution of nuclear technology was first proposed by Ireland in a meeting of the General Assembly of the United Nations in 1961. Although the members approved the resolution, it took until 1965 for negotiations to begin in earnest at the Geneva disarmament conference. At that time, U.S. negotiators worked to strike a delicate balance between the interest in preventing further transfer of the technology that it shared with the Soviet Union and the desire to strengthen its NATO allies by giving several Western European nations some measure of control over nuclear weapons. The plan for a nuclear NATO threatened to scuttle the talks altogether, and the United States eventually abandoned it in favor of reaching a workable treaty. A more difficult problem involved the question of bringing non-nuclear nations into line with the planned treaty. Nations that had not yet developed nuclear weapons technology were essentially being asked to give up all intentions to ever develop the weapons. Without this agreement on the part of the non-nuclear powers, having the nuclear powers vow never to transfer the technology would likely not result in any real limitation on the number of worldwide nuclear powers. After two years of negotiations, the nuclear powers managed to make enough concessions to induce many non-nuclear powers to sign.

The final treaty involved a number of provisions all aimed at limiting the spread of nuclear weapons technology. First, the nuclear signatories agreed not to transfer either nuclear weapons or nuclear weapons technology to any other state. Second, the non-nuclear states agreed that they would not receive, develop or otherwise acquire nuclear weapons. All of the signatories agreed to submit to the safeguards against proliferation established by the International Atomic Energy Agency (IAEA). Parties to the treaty also agreed to cooperate in the development of peaceful nuclear technology and to continue negotiations to help end the nuclear arms race and limit the spread of the technology. The treaty was given a 25-year time limit, with the agreement that it would be reviewed every 5 years.

The Nuclear Non-Proliferation Treaty was, and continues to be, heralded as an important step in the ongoing efforts to reduce or prevent the spread of nuclear weapons. Still, it had one major drawback in that two nuclear powers, France and the People’s Republic of China, did not sign the agreement, nor did a number of non-nuclear states. Of the non-nuclear states refusing to adhere, and thereby limit their own future nuclear programs, of particular importance were Argentina, Brazil, India, Israel, Pakistan, Saudi Arabia and South Africa, because these powers were close to being capable of the technology. In fact, in 1974, India joined the "nuclear club" by exploding its first weapon. Pakistan tested its first atomic bomb in 1983.

5.1.3. Limited Test Ban Treaty

This treaty did not have much practical effect on the development and proliferation of nuclear weapons, but it established an important precedent for future arms control. Both superpowers entered the 1960s determined to build or maintain nuclear superiority. The Soviet Union had led the way in the development of intercontinental ballistic missiles after its launch of the first man-made satellite, *Sputnik* , in 1957. In just a few years, it had developed an arsenal of long and medium range missiles that had raised alarm in Washington. President Kennedy had even campaigned for office on a claim that President Dwight Eisenhower had allowed the Soviet Union to far out-produce the United States in nuclear technology, creating a "missile gap." However, soon after he took office, the Kennedy Administration determined that the balance of nuclear power remained in favor of the United States.

With both sides working to develop new and better nuclear technology over the course of the late 1950s and early 1960s, each engaged in a series of test explosions. These nuclear tests received worldwide scrutiny, not only for what they meant for the arms race but also for what they meant for human life. As the United States, Soviet Union and United Kingdom tested new nuclear technologies in the earth's atmosphere, concerns emerged worldwide about the potential effects of radioactive fallout on the people exposed to it. This led to the formation of activist groups and public discussion of the issue.

The three countries entered into negotiations for a comprehensive test ban treaty in 1958. Having recently completed rounds of tests, at that time all three entered into a voluntary moratorium on all forms of testing, initiated first by the Soviet Union but later adhered to by the United States and Great Britain. In spite of this willingness to self-restrict testing, one of the most difficult issues preventing the conclusion of a formal treaty was the question of verification. The United States and Great Britain, in particular, pushed for on-site inspections of Soviet facilities as without them, it was impossible to determine whether the Soviets were continuing underground nuclear tests or just experiencing the frequent seismic activity to which its geographic area was prone. However, the Soviets were hesitant to permit such onsite inspections of its nuclear facilities, interpreting U.S. insistence on these inspections as a ruse to facilitate U.S. efforts to spy on Soviet advancements. After the Soviet military shot down an American U-2 spy plane over Russia in 1960, the prospects for reaching an agreement on the inspections issue all but disappeared. Khrushchev also rejected the idea of having the United Nations conduct inspections after observing what he believed was the organization's mishandling of the Congo crisis. Instead, in the wake of these incidents both the United States and the Soviet Union resumed testing.

5.2. Hiddings of Nuclear Weapon Programmes

Nuclear weapons are in fact outside the scope of IHL which applies when conflicts break out with a view to limiting, as much as possible, the suffering and destruction inherent in war. Their destructive power should have disqualified them from the outset, at their very conception, for reasons of non-compliance with the principles of the law of war, which are based on the distinction between civilian and military populations and infrastructure, as well as on the proportionality of a response to an attack. There is one more feature of the atomic bomb that must not be forgotten: its consequences also affect future generations. Consider the children and grandchildren of the hibakusha, the Japanese term used to describe the survivors of the bombings on Hiroshima and Nagasaki: having inherited genes modified by radiation, they suffer from various radiation-induced conditions. This trans-generational problem also concerns the victims of the more than 2,000 nuclear tests carried out for the purposes of developing these weapons, including 210 by France in the Sahara and Polynesia.

Well aware of the "extraordinary" nature of this new weapon, which he nevertheless ordered to be dropped on Japan, US president Harry Truman proposed the Baruch Plan in June 1946. This plan provided for the gradual transfer of possession of American nuclear weapons to an ad-hoc UN commission with the aim of countering nuclear proliferation. It was thus a response to the first resolution of the first UN General Assembly, adopted on 24 January

1946, which established “a Commission to deal with the problems raised by the discovery of atomic energy”.

In the process of developing their own arsenal, the Soviets rejected the American plan and came up with a counter-proposal that was just as unlikely to be accepted by the United States: they suggested establishing an international treaty outlawing nuclear war, which would have involved the destruction of all American weapons.

The failure of this first attempt by the victors of the Second World War to control nuclear weapons marked the beginning of the Cold War and the nuclear arms race. The USSR detonated its first bomb in 1949, followed a few years later by the United Kingdom (1952), France (1960) and China (1964). The military and the politicians then developed various concepts to justify the development of these weapons, including the strategy of the balance of terror, or mutually assured destruction. This extreme form of deterrence argues that the benefits of an attack would be outweighed by the losses, since each of the belligerents would be destroyed thanks to being permanently on alert to the possibility of a second strike, even if the first country hit were destroyed.

After going through various stages, this “confiscation” of nuclear-weapons control by the permanent members of the Security Council led to the adoption of the Non-Proliferation Treaty (NPT) at the UN in 1968. Mainly at the initiative of the United States and the United Kingdom, this treaty was established to counter the risk of other countries – some thirty at the time – mastering this technology, and therefore the possibility of possessing it, which would undoubtedly have increased the risk of its use. Let us not forget that six years earlier, in 1962, the Cuban Missile Crisis had brought the world to the brink of nuclear war.

In its preamble, the NPT solemnly refers to “the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples”.

For its proponents, however, the NPT “is the cornerstone of the global nuclear non-proliferation regime”, as reaffirmed on 19 May 2023 at the G7 Summit of heads of state and government in Hiroshima.

In other words, the world's leading powers want to be able to retain their nuclear weapons whilst preventing other countries from having them. To put it another way (and fifty-five years before this G7 summit held in a city eminently symbolic for our subject), for the first time in international law, this treaty introduced a status of inequality between its members. The NPT is based on three pillars:

1. a State that has conducted a nuclear test is deemed to be a "nuclear-weapon State Party" and undertakes not to transfer nuclear weapons and related technologies;
2. all other signatories to the treaty –designated as "non-nuclear-weapon States Parties" – undertake not to manufacture or acquire these weapons, in exchange for which they will have access to civilian nuclear power;
3. as stated in Article VI: "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."As this Article does not contain an obligation of results or a timetable, it therefore offers the opportunity for nuclear-weapon States Parties to retain nuclear weapons "legally" on the pretext that as long as there are countries that want to obtain these weapons, the security conditions have not been met to allow disarmament.

The Treaty came into force in 1970 for a period of twenty-five years and was renewed indefinitely in 1995, thus "legalising" the nuclear powers' lack of political will to achieve nuclear disarmament, to which they had nevertheless committed themselves under Article VI. This Treaty is almost universal, as only three countries that wanted to obtain nuclear weapons at the time (Israel, India and Pakistan) did not sign it, whilst a fourth, North Korea, withdrew from it in 2003, just before conducting its first tests. Every five years, an NPT Review Conference brings to the fore all the contradictions regarding these weapons. On the one hand, the permanent members of the Security Council – the nuclear-weapon States Parties – and their allies reaffirm the position explained above; on the other, the majority of the non-nuclear-weapon States Parties call for progress towards nuclear disarmament, spurred on by civil society organisations which advocate for it.

By basing the issue of nuclear weapons solely on the theme of proliferation, the nuclear powers have effectively limited it, whilst locking down the debate to their own advantage.

Insofar as they are weapons of mass destruction whose effects are indiscriminate, however, nuclear weapons should have been banned from the outset, under both the Geneva Conventions of 1949 and the prohibition contained in Additional Protocol I of 1977, and removed from the military arsenal of States on the very basis of international humanitarian law.

This has never happened because the countries possessing nuclear weapons have always wanted – and still want – to preserve the extraordinary nature of these weapons to their own advantage, basing their argument precisely on that extraordinary nature. Those who have signed and ratified the texts on which international humanitarian law is based, including Additional Protocol I of 1977, have at the same time expressed certain reservations about their interpretation. This is the case of France, for example:

"The Government of the French Republic continues to consider that the provisions of the Protocol relate exclusively to conventional weapons, and that they can neither regulate nor prohibit the use of nuclear weapons, nor prejudice other rules of international law applicable to other weapons necessary for France to exercise its inherent right of self-defence."

The annual General Assembly of the United Nations reflects this permanent tension between the two dynamics: on the one hand there are States which, for reasons of power, want to retain these weapons, which in turn allows them to lock down the international system to their advantage; and, on the other, there are States and populations which want to eliminate these weapons. Any State using such weapons, indeed, "is to be considered as violating the Charter of the United Nations, as acting contrary to the laws of humanity and as committing a crime against mankind and civilization", as highlighted in Resolution 1653 (XVI) adopted by the UN General Assembly on 24 November 1961. Resolutions calling for the abolition of nuclear weapons are adopted every year, but they remain unheeded, blocked at the Security Council where the nuclear powers have the right of veto.

In a case referred to it in 1994, the International Court of Justice delivered an advisory opinion on 8 July 1996 which reflects the contradictions between the bomb and IHL: after intense debates, the Court noted that "in view of the unique characteristics of nuclear weapons, the use of such weapons seemed scarcely reconcilable with respect for the requirements of the law applicable in armed conflict". But "in view of the current state of international law and of the elements of fact at its disposal, [it] cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake".

To break the deadlock, many civil society organisations decided to come together in 2007 to form the International Campaign to Abolish Nuclear Weapons (ICAN) and overcome the problems created within the UN. With its reasoning based on the risk of nuclear proliferation, the coalition focuses on IHL and the catastrophic consequences of the use of nuclear weapons and the inability of humanitarian organisations to cope with them. In the space of ten years, this IHL-based approach, with the involvement of the Red Cross and Red Crescent movements, has managed to create the conditions for a majority coalition of non-nuclear-weapon States Parties within the United Nations General Assembly to begin a process of negotiating a legally binding instrument to ban nuclear weapons with a view to their elimination.

The nuclear powers and their allies have brought all their weight to bear but failed to block this new humanitarian dynamic modelled on the campaigns that, a few years previously, had led to a ban on anti-personnel mines and cluster bombs.

After four weeks of intense negotiations at UN headquarters, a treaty was drawn up and adopted on 7 July 2017 by 122 States. Unlike the NPT, this Treaty on the Prohibition of Nuclear Weapons (TPNW) is based on the rights and principles of international humanitarian law. Opened for signature on 20 September 2017, it entered into force on 22 January 2021, ninety days after the fiftieth ratification. By the end of May 2023, ninety-two countries had signed it, sixty-eight of which had ratified it. The manufacture of these weapons, their trade and the threat to use them (i.e. nuclear deterrence) are prohibited. Assistance for victims and remediation of nuclear damage are also included in the TPNW. This was undeniably a victory which culminated in ICAN being awarded the 2017 Nobel Peace Prize. And brought hope for the abolition of these weapons before any new catastrophic use.

6. Questions to be Addressed (QTBA)

1. Is nuclear energy a better method of energy production? If yes, how can nuclear facilities be further improved and spread throughout the globe without risking nuclear weapon proliferation?
2. How can the environmental effects of nuclear energy such as waste production be reduced?
3. Which threats do expired nuclear facilities propose and how can they be addressed?
4. Which dangers are existing nuclear facilities in? How can they be addressed?
5. How can the past UN actions be revisited and enhanced?
6. Does and should conducting nuclear weaponry explosion tests comply with international law, and how can the harms of conducted tests be reduced?
7. What precautions can be taken against nuclear weapon research being hidden as civil nuclear energy research?
8. How can international investigative activities and treaties against nuclear weaponry be improved to better detect hidden nuclear weaponry development?
9. What protocols should be followed in case of a nuclear attack or facility meltdown?

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