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TWO PAGE ASSIGNMENT ON THE NUCLEAR WEAPONS

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WEAPONS OF MASS DESTRUCTION

INTRODUCTION

Weapons of mass destruction have become one of the most pressing issues in the international arena among state of the world which has an influential role in world politics today. Weapon of mass destruction is highly characterized by it’s indiscriminate nature and its potential to cause mass destruction to people. Weapons of mass destruction are of three different types which are nuclear weapons, chemical warfare agents, biological warfare agents, some are of the view that this should include radiological materials and missile technology as well as its delivery system.

Killing of human beings have always been a part of warfare but the concept of weapon of mass destruction can be viewed as a game changer which poses a threat to global peace and security. Other the years with the advancement of technology some nations of the world have keyed into the production of nuclear weapons while others have destroyed stockpiles of nuclear weapons. Presently there are nine countries of the world said to be in possession of nuclear weapons, these countries are; Britain, China, France, India, Israel (assumed), North Korea (claimed), Pakistan, Russia, and the United States.

The estimate of the possession of nuclear weapons are about 30,000 which more than what existed during the era of the cold war. The bombing of Hiroshima and Nagasaki in Japan immediately devastated their targets. Over the next two to four months, the acute effects of the **atomic bombings** killed between 90,000 and 146,000 people in **Hiroshima** and 39,000 and 80,000 people in **Nagasaki**; roughly half of the deaths in each city occurred on the first day.

The nuclear weapons in possession On average have the capacity of 20 times greater power than that which destroyed Hiroshima and Nagasaki. In as much as no nuclear weapon has been used in warfare over the years, these weapons have been a symbol of strength and a tool for influence in diplomatic bargaining.

**How Nuclear Weapons Work**

Nuclear weapons, like conventional bombs, are designed to cause damage through an explosion that releases a large amount of energy in a short period of time. In conventional bombs, the explosion is created by a chemical reaction, which involves the rearrangement of atoms to form new molecules. In nuclear weapons, however, the explosion is created by changing the atoms themselves, either by splitting them or fusing them together to create new atoms.

There are two main types of nuclear weapons: fission weapons and fusion weapons.

Fission weapons: In fission weapons, atoms are split. The core of a fission bomb is made of either plutonium or highly enriched uranium. Plutonium and uranium atoms are both heavy, meaning they have a large number of protons and neutrons in the nucleus. During fission the nuclus split into nuclei which are then absored by other nuclei which split again setting off a chain reaction Plutonium or highly enriched uranium are the only materials known that can achieve such powerful, fissile chain reaction.

Fusion weapons: In fusion weapons often known as hydrogen bombs—deuterium and tritium, two isotopes of hydrogen, are fused together to create heavier atoms. This is the same reaction that occurs in the center of the sun. Fusion can only happen at extremely high temperatures and pressure. In a fusion weapon, such a state is created by using a fission explosion (i.e. an atom bomb) to trigger the fusion reaction. There is no theoretical limit to the explosive force of a fusion weapon. Typically, fusion weapons are 10 to 100 times as explosive as the fission bombs dropped on Hiroshima and Nagasaki.

Effects of Nuclear Weapons

To grasp the effect of nuclear weapons we must understand the ton of effect/ consequence it has ; blast, thermal radiation, electromagnetic pulse, direct nuclear radiation, and fallout.

Blast: A fraction of a second after a nuclear explosion, the heat from the fireball causes a high-pressure wave to develop and move outward producing the blast effect. The front of the blast wave, i.e., the shock front, travels rapidly away from the fireball, a moving wall of highly compressed air. Using comparison, brick houses and human lungs can be crushed at about 30 psi pressure or less.

Thermal radiation: This involves heat and light. The heat from a nuclear explosion vaporizes everything within the radius. The light produced by a nuclear explosion can be seen from hundreds of miles away depending on the power of the weapon and the atmospheric weather conditions. This has effects such as blindness, burn shadows into concrete, ignite flammable materials at large distances, and burn human skin.

Electromagnetic pulse: nuclear explosion sends out an electromagnetic pulse, similar to the thermal pulse. The nuclear explosion disables all electrical devices.

Direct nuclear radiation: A nuclear explosion releases several forms of radiation. Both gamma rays and neutrons easily penetrate solid objects and can be deadly Alpha particles cannot penetrate human skin but If ingested alpha particles will cause the most damage to the human body.

Fallout: This includes the mixture from particles of buildings and other objects on ground including the harsh radioactive particles. Radioactive fallout may be the most dangerous effect of a nuclear explosion because the area of exposure to fallout is much wider and more unpredictable than that of direct nuclear radiation. Its removal is a costly and dangerous job. There is no known way of neutralizing radioactive fallout meaning the population in such area have to evacuate the location. It takes thousands of years for such areas to become habitable again.

Effects of Radiation on Humans

Radiation affects those cells in the human body that actively divide, such as those found in hair, in the intestinal tract, in bone marrow, and in the reproductive organs. Radiation at a high dose causes death within hours, days or weeks depending how one is exposed to it. Radiation at a low doses could still cause changes in the human cell in the future such as mutated of defective genes. However, being exposed to radiation for a long time it could lead to increased rate of leukemia and thyroid, lung, breast, and bone cancers. For example, uranium mine workers have a high tendency of developing lung cancer from the radioactive dust inhaled, survivors from the Hiroshima suffered leukemia, cataract, hair loss.

Conclusion

Weapons of mass destruction have become a growing concern in the international arena because of its tremendous capacity/ potential to wipeout the whole world and the rapid increase in number since the cold war era.