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MONOGRAPH

“Protection protocol during a nuclear attack”

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Gratitude

I want to thank God in the first place for giving me this opportunity, for enlightening me and guiding me on the path of good. In second place to my family especially to my mom for always being there for me and helping me in this project that is to be able to help many people.

Summary

In this monograph the author explains different ways in which a person can lead to survive a nuclear attack. But before this she explains the types of pumps that have been created so far and when they have been used. After a comparison between two nuclear catastrophes, one from Hiroshima and the one from Chernobyl, she clarifies the parameters by which one had more damage in the place so far and the other may already be habitable for citizens. The parameters that are spoken are: the height of the explosion and the amount of substance exploited, this is very important because substances at a very high altitude can evaporate and not cause damage.

The ways in which a person can get to protect themselves are: to have an emergency kit, in that a set of clothes must be included so that they can be changed. Another can be to go to an underground and close any entry of wind from the outside because that oxygen is already contaminated, if it does not have a subway close the windows of the room very well since there sometimes there are gaps where the air enters.

The first bomb used to end the Second World War was one of the greatest disasters on earth and that most of the substance that was thought to explode did not because it evaporated in the environment and did not do much damage than previously thought.

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Introduction

This monograph is an investigation about a protection protocol during a nuclear attack, its purpose is to identify the different forms of protection, so that people feel more secure in their homes in countries with more vulnerability to an attack like this, to through talks explaining the possible measures that have to be taken.

The bombs were created with a purpose of protection, but now it is to attack rival countries and cause damage regardless of the consequences. The first was exploited on August 1945. The study of this subject began in mid-1945 from the first explosion that received Hiroshima that ended the Second World War. After a few years there was an explosion in a reactor in Chernobyl that caused a lot of tragedy with the passing of the years, until now it continues with a very high level of radioactivity the affected place.

There were several important people who made some very interesting discoveries and from which good things could be drawn, but these were used in a way that they were not intended for. Every day different countries around the world are looking for a peculiar form of destruction and that will not end well, because after a few years it is likely that the domino effect will occur in which it consists that when one country attacks another This will continue and as there will be a large number of countries with these weapons it will be a war in which it never ends.

The monograph will contain three chapters: the first will deal with atomic bombs, the first elements that were discovered, the four types of bombs that are: hydrogen, uranium, plutonium and neutrons; the second on the explosions in recent decades and because some are currently not habitable that have been the attack on Hiroshima and Nagasaki and the other was an explosion in a reactor in Chernobyl, influence many fields such as the height at which the explosion was made, the amount of chemicals that were used, also the second chapter talks about the amount of nuclear weapons that have the main and secondary countries.

In the third chapter I will talk about the steps that should be taken to protect yourself after having been present of a nuclear attack. These steps must be followed by the people who survive the first impact that this one makes. After the impact there is a shower of radiation, that's when more people die because they do not know what to do.

Chapter I

The atomic bombs

In this chapter I'm going to talk about the origin of the bombs, the main elements of each of them. The types of bombs with their consequences and place of creation. Atomic bombs is the reaction of certain elements that when coming together expel a gas or radiation depending on the pump and the function for which they were created.

1.1 The origin of the atomic bombs

The chemical elements found in the periodic table were not always there. It took years, decades to centuries to be discovered. The only couple that managed to discover two elements were Marie and Pierre Curie. All the elements have different uses, whether they are good or bad for the planet, but the mixture of some of the elements caught the attention of Albert Einstein without realizing that this would lead to serious consequences.

Born was one of the first who decided to use atomic energy for destructive purposes, this was because he had a very critical attitude.

1.1.1 The first discovered elements.

Marie and Pierre Curie were a couple of husbands who together discovered two of the most radioactive elements that are radio and polonium. As they did not know that the amount of

radioactivity that these elements possessed was very strong and by working a lot with the elements, they exposed their bodies to radiation and died a few years later.

1.2 Types of atomic bombs

In the last century, destructive weapons with chemical materials have been manufactured. These weapons were called nuclear bombs. Only one of these has been used, but there are many more manufactured ones that are stored. There are four types of pumps each pump is called by the element that are most composed, these are: Uranium, Plutonium, Hydrogen and Protons. Most of these bombs have been previously tested before the attack, this is done so that the enemy knows that they have a powerful and very destructive weapon. It is also considered a warning, but as some believe that nothing will happen and these disasters end up happening where thousands of innocent people die.

"Nuclear explosions are the result of very rapid chain reactions. There are certain elements, and within those elements certain isotopes, which react easily "(Torquemada, 1985, p.10). That is why it is considered the most destructive and instantaneous weapon of all time.

1.2.1 Uranium bomb.

The atomic bomb was composed of uranium by Albert Einstein with the help of other scientists. In the beginning he and his team began to make this bomb as protection, not mass destruction. On August 2, 1943, during the Second World War, Einstein addressed a letter to

President Roosevelt "urging him to build a uranium bomb in the face of Nazi danger" (Polo, López, 1987, p.151).

After R. Oppenheimer began to direct the construction of the first uranium bomb, he was part of the United States Atomic Energy Commission.

The first uranium bomb was launched on August 6, 1945 on Hiroshima Little Boy of 4 tons composed of 90 kilograms of uranium 235. There was never a test this was the first time that they detonated a bomb of this magnitude.

1.2.2 Plutonium bomb.

The plutonium bomb was created during the Second World War with the purpose of destroying the enemy cities. This pump was performed on par with the uranium. A bomb of 4.5 tons and 60 kilograms of plutonium was launched in Nagasaki on August 6, 1945. The power of this pump is equivalent to 20,000 tons of dynamite.

According to Meyer (2003), to produce plutonium, a uranium nuclear reactor must be set in motion, since it is the fusion of uranium. For the bomb to explode there must be a detonation by implosion. A test of this detonation was carried out on July 16, 1945, since it is an excellent result, they did not have to make any changes in this regard.

1.2.3 Hydrogen bomb.

As it says its name is composed of hydrogen which is the element with the highest density. The Hungarian physicist Teller was the one who started the next generation of destructive bombs, those that possessed hydrogen inside. It can also be called a fusion or thermonuclear bomb.

With the help of physicist Teller they began to carry out this bomb, months later the tragedy of Hiroshima and Nagasaki occurred. The Americans, seeing that they were not the only ones with the idea of creating nuclear bombs that led them to perfect themselves more. The purpose of this project was to carry out the fission-fusion-fission process. It was the mixture of fusion fuel with plutonium.

The first test of the hydrogen bomb was carried out in 1952. In the following countries tests were carried out: Russia, France, China and the United States. The power is represented in kilotons that is equivalent to one tonne of TNT and one thousand kilotons is equivalent to one megaton. Today there are bombs with powers of 20 to 50 megatons.

1.2.4 Neutron bomb.

This pump is also known as a direct radiation pump. It is the last pump created and demonstrated so far. It began to be manufactured in the late 60s by the inventor Samuel Cohen. It

has some compounds similar to hydrogen but in different amounts. This bomb has the ability to only attack humans and leave all objects around intact.

"In the initial stage. The US, and NATO have declared their readiness to use tactical nuclear weapons to defend themselves against an invasion of that policy if conventional NATO forces could not keep the line. "(1978). As these countries are ready to attack at any time if required, for this reason many of the most vulnerable countries to be attacked are nervous and very concerned because there is a very high probability that this will happen.

Chapter II

Nuclear misfortunes in the last decades

In recent decades there have been many warnings of nuclear attacks of which 2 were made, which were almost consecutive that of Hiroshima and Nagasaki that left many dead. In Chernobyl there was an explosion of chemicals in reactor 4, this explosion did not cause so much misfortune at the time. It is currently possible to live in Hiroshima and Nagasaki, but not in Chernobyl.

Although the day in which these misfortunes happened the one that had the greatest victims was Hiroshima with approximately 166,000 deaths, from there Nagasaki continues with 80,000 dead "Japan, whose power suffered a vertical fall from the Hiroshima and Nagasaki bombs" (Che Guevara, 1967, p.2). And in Chernobyl there were two deaths that were employees of the plant that exploded. These two incidents had different consequences and Chernobyl can leave deader.

2.1 Why can one currently live in Hiroshima but not in Chernobyl?

In the Hiroshima attack there was a very high number of deaths. A few years later there was an explosion in reactor 4 at Chernobyl that left only two victims. After one month 30 people died and little by little they continued to increase. They had to close this city because the radiation that had been expelled was very high. These two situations have similarities and differences. Because both used uranium to detonated, gamma rays and neutrons were ejected, but detonated at different heights.

2.1.1 For its used fuel

What happened was that different amounts of nuclear fuel were used and that produced serious consequences so far. The Hiroshima bomb had 64kg of uranium inside it, while the reactor 4 of Chernobyl had 3,600kg of pure uranium, so when it exploded and flew the cover that protected it more than 200kg, it spread into the environment. It explains many things.

2.1.2 For the height at which it detonated

They exploded at different heights and with different efficiency. According to experts, the destructive consequences of the Hiroshima bomb would have been much worse if it had detonated at ground level, but the bomb exploded 600 meters from the ground, and it only melted 10% of the uranium since the explosion itself was so strong that evaporated the remaining 90% in the atmosphere and the wind helped to spread. At Chernobyl the explosion occurred on the ground and although it was less powerful, it caused the uranium to contaminate the entire area with radiation.

2.1.3 For its neutrons and gamma rays.

The Hiroshima bomb generated a force equivalent to 21 kilotons of dynamite, so the bomb instantly raised the temperature to 1 million degrees creating a sphere of fire 256 meters in diameter in just one second, despite this destructive power only the 10% of the radiation released by the bomb was neutron radiation which makes radioactive things, while the rest of the radiation was gamma rays that are lethal at the moment but do not leave as much radiation in their path.

On the contrary the explosion of Chernobyl generated gases that turned radioactive to the whole place. Most things have radioactivity and the natural average of the earth is 0.1-0.2 micro sievert. Nowadays Hiroshima has 0.3 a little higher than the normal but not much, however in Chernobyl the radiation depends a lot on the place some sites the levels are normal but there are places that go from 20, 30 and even 300 micro sievert this causes that anyone who wants to enter there even with protection can die is why today people can live in Hiroshima but not in Chernobyl.

2.2 Countries that possess nuclear weapons

One of the new ways to attack is through nuclear weapons. These are high in price so not any country can get one. The top 5 countries with nuclear weapons are: Russia, the United States, France, China and the United Kingdom. Apart there are three secondary countries that also have but a smaller amount compared with the previous ones are: Pakistan, India and North Korea.

2.2.1 The main countries

Russia is the country that has the largest amount of chemical weapons with an approximate between 5,000 and 10,000, recently Putin reported that he has a new group of weapons that is invincible. The armament includes from intercontinental missiles to hypersonic rockets and weapons with laser beams. The United States is the second country with the largest amount of chemical weapons, with approximately 2,150 and 2,800 reserves. France compared to

the first two does not have so many weapons only has 300. China has an average of 178 to 240 and finally the United Kingdom between 160 to 225.

Sobergues (2014) Affirms that the explosives are easy to find and that "they are so small that they can be carried in the pocket, and so perfected that they can instantly kill dozens, hundreds or thousands of people" (p.13).

2.2.2 The secondary countries

Pakistan began to carry out bomb tests in 1998 in Chagai since then between 90 and 110 chemical weapons have been created. In India they started in 1974 at Smiling Buddha and reached an estimated 70 weapons. Finally this North Korea with 10 bombs they started with the tests recently in the year 2006.

Other countries have tried to access this nuclear club in the past, or it is suspected that they have done so, but for various reasons they did not achieve it or gave up. Many Western European countries, as well as Canada, Mexico and Japan, could easily have a respectable nuclear force if they proposed it but have not expressed their desire and political will to do so.

Definitely, every bomb brings chaos, death and many irreparable damages for humanity. Having analyzed the consequences of the disasters caused in Hiroshima and Chernobyl helped me to understand that the explosion varies depending on some factors such as: the environment, the amount of chemicals used, etc.

Chapter III

Proteccion during a nuclear attack

In recent years there have been many threats with atomic bombs and that has worried the cities that inhabit the threatened countries. Because this has now been implemented new ways to protect yourself because most people do not die on the spot but minutes or hours later not knowing what to do in that situation. Something indispensable that each person has to possess is a whistle because this way it does not wear out his voice to ask for help and there he can be heard at a greater distance.

In this chapter I am going to talk about ways to prevent serious harm to people in a nuclear attack. The indications given would be for people who have not already died in the impact that depends a lot on where you are as in a subway there is much more likely to survive than being outside. Some angles near large buildings help a lot by directing the radiation to other sides and decreasing them towards the person. The steps you should follow to survive a nuclear attack are:

3.1 Seek shelter

If you survive the nuclear explosion, the most important step you must take is to find a refuge. You will be disconcerted, dazed by the magnitude of the events that have just occurred and you will be worried about your loved ones, but it is a priority that you look for a place where

you can be covered. Because the most fearsome danger after the explosion is radioactive rain, which is the resulting phenomenon after a nuclear explosion.

The best shelters are basements, houses with multiple floors and above all, underground spaces (garages and tunnels), which greatly reduce the risk of radioactivity. The materials that best protect the radiation according to the EPA guide (s.f.) are concrete, brick and stone. While metal plates and wood offer insufficient protection for long periods of time. The ideal would be to have a bunker enabled but, as most people do not have a similar protection structure, we must look for other means.

It is important that the shelter has protection on all sides so that no radioactive particles are leaked. Also, it is advisable to keep it warm and dry, free of dust particles, which are especially dangerous. According to radiation expert Brooke Buddemeier (s.f.), radioactive fallout disappears between 6 and 24 hours after the explosion, unless there are new attacks.

You have to have patience and wait. The basic services, if they remain will be collapsed by the magnitude of the attack and most of the media will not work, except for the radio. Wear all the clothes you can wear (hats, gloves, glasses, long-sleeved shirt, etc.), especially when you're outside, to avoid beta burns. Decontaminate yourself by constantly shaking your clothes and washing any exposed part of your skin with water. Over time, the residues left on your skin will cause burns.

3.2 Decontamination

After staying sheltered in the shelter, what we have to proceed is to decontamination. It is necessary to shake the clothes of the radioactive particles that remain in it, if there is water, it is advisable to wash the body to erase any trace of dust, which may have radioactive particles. If potassium iodide is available (it can be found in pharmacies) it is advisable to ingest it, as it helps to prevent thyroid cancer, especially for children who are most affected by radiation.

The foods that you can eat without risk are those that are preserved, mainly those that are in protected cans. Animals that come from contaminated areas can be consumed but you have to remove the skin and viscera, especially the heart, liver and kidneys. The majority of the plants can be eaten, preferably those that have edible parts under the ground, and present a smooth and soft surface, since they are easier to wash.

As for water, if it comes from an underground source, the better. To remove the radioactive particles from the water, purification tablets are boiled or used (they are found in pharmacies).

If water cannot be purified in this way, there is another solution, according to Rupert Goodwins survivalist journalist, rhizofiltration, which involves using live plants to filter water through its roots.

Un arma nuclear que detona a una gran altitud generará un pulso electromagnético tan poderoso que puede destruir los dispositivos electrónicos y eléctricos. Por lo menos, desconecta todos los dispositivos de los tomacorrientes y las antenas. Colocar las radios y las linternas en un contenedor de metal sellado puede protegerlos del pulso electromagnético, siempre y cuando dichos objetos no estén en contacto con el contenedor. El blindaje de metal debe rodear por completo a los objetos protegidos y es mucho mejor si tiene una conexión a tierra.

3.3 Keep calm

A nuclear attack is a traumatic experience, difficult to cope with, but if we want to ensure our survival and that of our loved ones, it is essential to remain calm, and wait for the radioactive rain (the main danger) to pass.

You have to pay attention to the radio in case the authorities issue a warning or there is an evacuation plan. We must always be prepared, we do not know if a catastrophe of any kind can occur and these recommendations, in times of nuclear crisis, can save your life.

If you suffer a slight or severe burn you should follow the following steps:

Slight burn, immerse the beta burns in cold water until the pain subsides (usually for 5 minutes). If the skin begins to blister, become scorched or crack, wash it with cold water to remove contaminants; then cover it with a sterile compress to prevent infection. If the skin does not blister, scorch or crack, do not cover it even when the damage is in a large part of the body. Instead, wash the area and cover it with petroleum jelly or a baking powder and water solution if you have it at your disposal. The wet earth will also work.

Severe burn: it is also known as a thermal burn, since it is mainly caused by the high intensity heat generated by the explosion and not by the ionizing particles, although it can also occur because of the latter. This type of burn can be fatal, since everything becomes a factor: loss of water, shock, lung damage, infection, etc. Follow these steps to be able to treat it. Protects burns from increased contamination. If you have clothing that covers the area, cut it carefully and remove it. Do not try to take off any clothing that has adhered to or been fused with the burn. It is best to call emergency.

Conclusions

At the end of this monographic work it is concluded that:

- The nuclear bombs are a weapon of mass destruction that costs a lot of money to manufacture depending on the chemical elements that are needed. There are four types of pumps that are: Uranium, Plutonium, Hydrogen and Neutrons.
- The first use of this weapon was in the year 1945 in Hiroshima, the second was in Nagasaki and this attack ended the Second World War.
- The explosion in reactor 4 at Chernobyl left many people dead due to the radioactivity that has hitherto been in place. This radioactivity has become 200 times stronger than what we are used to supporting in our environment, which is 0.1 to 0.2.
- One of the best ways to survive a nuclear attack is to be well informed of what to do if you survive because due to the ignorance of many people they die slowly.
- The destruction that a pump can achieve depends very much on the areas, such as the height at which it explodes, the amount of substance used, the type of mixture in the substance and, finally, the environment in which it is located.
- Lack of information causes more death because they do not know how to react to this scenario.
- The bombs they explored did not destroy everything that was thought because it evaporated in the atmosphere and away from this place.

Recommendations

At the end of this work it is recommended that:

- Always be alert for any attack and if you are in a place where there are many people and have an exit route for any eventuality.
- Citizens who are in places with a high chance of being attacked by any of these bombs have two options, either create a small bunker or go to another place so that their family members are safe.
- It is never bad to have an evacuation plan so that you can be more calm if something ever happens.

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