


<p>RABUN COUNTY SHERIFF'S OFFICE</p>  <p>General Order Number: 4.52</p>	<p>Date of Issue</p> <p>2/23/2016</p>	<p>Effective Date</p> <p>2/23/2016</p>	<p>Revision Date</p>
<p>Subject: CBRN Awareness (Chemical, Biological, Radiological, and Nuclear)</p>	<p>Amends:</p>	<p>Rescinds:</p>	
<p>Index as: CBRN Hazardous Materials</p>	<p>State Certification Standards: 5.34</p>		

PURPOSE

The following information is designed to provide all members of the Rabun County Sheriff's Office with awareness level guidelines for events involving (CBRN) chemical, biological, radiological, nuclear weapons, and hazardous materials.

STATEMENT OF POLICY

It shall be the policy of the Rabun County Sheriff's Office to be prepared in the case of chemical, biological, and/or nuclear weapons and hazardous materials.

DEFINITION:

Chemical Agents: poisonous vapors, aerosols, liquids, and solids that have toxic effects on people, animals, or plants. They can be released by bombs or sprayed from aircraft, boats and vehicles. They can be used as a liquid to create a hazard to people and the environment. Some chemical agents may be odorless and tasteless. They can have an immediate effect (a few seconds to a few minutes) or a delayed effect (2 to 48 hours). While potentially lethal, chemical agents are difficult to deliver in lethal concentrations. Outdoors, the agents often dissipate rapidly. Chemical agents are difficult to produce.

A chemical attack could come without warning. Signs of a chemical release include people having difficulty breathing, experiencing eye irritation, losing coordination, becoming nauseated or having a burning sensation in the nose, throat, and lungs. Also the presence of many dead insects or birds may indicate a chemical agent release.

Biological Agents: organisms or toxins that can kill or incapacitate people, livestock, and crops. The three basic groups of biological agents that would likely be used as weapons are bacteria, viruses, and toxins. Most biological agents are difficult to grow and maintain. Many break down quickly when exposed to sunlight and other environmental factors, while others, such as anthrax spores, are very long lived. Biological agents can be dispersed by spraying them into the air; by infecting animals that carry the disease to humans and by contaminating food and water.

Radiological Dispersion Device (RDD): Often called “dirty nuke” or “dirty bomb” is considered far more likely than use of a nuclear explosive device. And RDD combines a conventional explosive device – such as a bomb – with radioactive material. It is designed to scatter dangerous and sub-lethal amounts of radioactive material over a general area. Such RDD’s appeal to terrorists because they require limited technical knowledge to build and deploy medicine, agriculture, industry and research, and are easier to obtain than weapons grade uranium or plutonium. The primary purpose of terrorist use of an RDD is to cause psychological fear and economic disruption. Some devices could cause fatalities from exposure to radioactive materials. Depending on the speed at which the area of the RDD detonation was evacuated or how successful people were at sheltering-in-place, the number of deaths and injuries from and RDD might not be substantially greater than from a conventional bomb explosion.

Nuclear Blast: An explosion with intense light and heat, a damaging pressure wave, and widespread radioactive material that can contaminate the air, water, and ground surfaces for miles around. A nuclear device can range from a weapon carried by an intercontinental missile launched by a hostile nation or terrorist organization, to a small portable nuclear device transported by an individual. All nuclear devices cause deadly effects when exploded, including blinding light, intense heat (thermal radiation), initial nuclear radiation, blast, fires started by heat pulse, and secondary fires caused by the destruction.

I. DECONTAMINATION GUIDELINES:

Decontamination is needed within minutes of exposure to minimize health consequences. A person affected by a chemical agent requires immediate medical attention from a professional. If medical help is not immediately available, decontaminate yourself and assist in decontaminating others.

- A. Use extreme caution when helping others who have been exposed to chemical agents.
- B. Remove all clothing and other items in contact with the body. Contaminated clothing normally removed over the head should be cut off to avoid contact with the eyes, nose and mouth. Put contaminated clothing and items into a plastic bag and seal it. Decontaminate hands using soap and water. Remove eyeglasses or contact lenses. Put glasses in a pan of household bleach to decontaminate them and then rinse and dry.
- C. Flush eyes with water.
- D. Gently wash face and hair with soap and water before thoroughly rinsing with water.
- E. Decontaminate other body areas likely to have been contaminated. Blot (do not swab or scrape) with a cloth soaked in soapy water and rinse with clear water.

- F. Change into uncontaminated clothes. Clothing stored in drawers or closets is likely to be uncontaminated.
- G. Proceed to a medical facility for screening and professional treatment.

II. BIOLOGICAL ATTACKS:

Delivery methods of biological attacks include:

- Aerosols – biological agents are dispersed into the air, forming a fine mist that may drift for miles. Inhaling the agent may cause disease in people or animals.
- Animals – some disease are spread by insects and animals, such as fleas, mice, flies, mosquitoes, and livestock.
- Food and water contamination – some pathogenic organisms and toxins may persist in food and water supplies. Most microbes can be killed, and toxins deactivated by cooking food and boiling water. Most microbes are killed by boiling water for one minute, but some require longer. Follow official instructions.
- Person-to-person – spread of a few infectious agents is also possible. Humans have been the source of infection for smallpox, plague, and the Lassa viruses.

If you become aware of an unusual and suspicious substance nearby:

- Move away quickly.
- Wash with soap and water.
- Contact the Rabun County Sheriff's Office for Haz-Mat Team response.
- Seek medical attention if you become sick.

If you are exposed to a biological agent:

- Remove and bag your clothes and personal items. Follow official instructions for disposal of contaminated items.
- Wash yourself with soap and water and put on clean clothes.
- Seek medical assistance. You may be advised to stay away from other or even quarantined.

III. RADIOLOGICAL ATTACKS:

- A. The size of the affected area and the level of destruction caused by an RDD would depend on the sophistication and size of the conventional bomb, the type of radioactive material used the quality and quantity of the radioactive material, and the local meteorological conditions – primarily wind and precipitation. The area affected could be place off-limits to the public for several months during cleanup efforts.
- B. While the explosive blast will be immediately obvious, the presence of radiation will not be known until trained personnel with specialized equipment are on the scene. It would be safer to assume radiological contamination has occurred – particularly in an urban setting or near other likely terrorist targets – and take the proper precautions. As with any radiation, avoid or limit exposure. This is particularly true of inhaling radioactive dust that results from the explosion. As you seek shelter from any location (indoors or outdoors) and there is visual dust or other contaminants in the air, breathe through the cloth of your shirt or coat to limit your exposure. If you manage to avoid breathing radioactive dust, your proximity to the radioactive particles may still result in some radiation exposure.

**** If the explosion or radiological release occurs inside, get out immediately and seek safe shelter.**

- C. Contamination from an RDD event could affect a wide area, depending on the amount of conventional explosives used, the quantity and type of radioactive material released, and meteorological conditions. Thus, radiation dissipation rates vary, but radiation from an RDD will likely take longer to dissipate due to a potentially larger localized concentration of radioactive material.

IV. HAZARDS OF NUCLEAR DEVICES:

The extent, nature and arrival time of these hazards are difficult to predict. The geographical dispersion of hazard effects will be defined by the following;

- a) Size of the device. A more powerful bomb will produce more distant effects.
- b) Height above the ground the device was detonated. This will determine the extent of blast effects.
- c) Nature of the surface beneath the explosion. Some materials are more likely to become radioactive and airborne than others. Flat areas are more susceptible to blast effects.
- d) Existing metrological conditions. Wind speed and direction will affect arrival time of fallout; precipitation may wash fallout from the atmosphere.

V. RADIOACTIVE FALLOUT:

Even if individuals are not close enough to the nuclear blast to be affected by the direct impacts, they may be affected by radioactive fallout. Any nuclear blast results in some fallout. Blasts that occur near the earth's surface create much greater amounts of fallout. Blasts that occur near the earth's surface create much greater amounts of fallout than blasts that occur at higher altitudes. This is because the tremendous heat produced from a nuclear blast causes an updraft of air that forms the familiar mushroom cloud. When a blast occurs near the earth's surface, millions of vaporized dirt particles also are drawn into the cloud. As the heat diminishes, radioactive materials that have vaporized condense on the particles and fall back to Earth. The phenomenon is called radioactive fallout. This fallout material decays over a long period of time, and is the main source of residual nuclear radiation.

Fallout from a nuclear explosion may be carried by wind currents for hundreds of miles if the right conditions exist. Effects from even a small portable device exploded at ground level can be potentially deadly.

Nuclear radiation cannot be seen, smelled, or otherwise detected by normal senses. Radiation can only be detected by radiation monitoring devices. This makes radiological emergencies different from other types of emergencies, such as floods or hurricanes. Monitoring can project the fallout arrival times, which will be announced through official warning channels. However, any increase in surface build-up of gritty dust and dirt should be a warning for taking protective measures.

In addition to other effects, a nuclear weapon detonated in or above the earth's atmosphere can create an electromagnetic pulse (EMP), a high-density electrical field. An EMP acts like a stroke of lightning but is stronger, faster, and shorter. An EMP can seriously damage electronic devices connected to power sources or antennas. This includes communication systems, computers, electrical appliances, and automobile or aircraft ignition systems. The damage could range from a minor interruption to actual burnout of components. Most electronic equipment within 1,000 miles of a high-altitude nuclear detonation could be affected. Battery-powered radios with short antennas generally would not be affected. Although an EMP is unlikely to harm people, it could harm those with pacemakers or other implanted electronic devices.

The following are guidelines for what to do in the event of a nuclear explosion:

- Take cover as quickly as you can, below ground if possible, and stay there until instructed to do otherwise.
- Listen for official information and follow instructions.
- Do not look at the flash or fireball – it can blind you.
- Take cover behind anything that might offer protection.
- Lie flat on the ground and cover your head. If the explosion is some distance away, it could take 30 seconds or more for the blast wave to hit.

- Take shelter as soon as you can, even if you are many miles from ground zero where the attack occurred – radioactive fallout can be carried by the winds for hundreds of miles. Remember the three protective factors: Distance, shielding and time.

Decay rates of the radioactive fallout are the same for any size nuclear device. However, the amount of fallout will vary based on the size of the device and its proximity to the ground. Therefore, it might be necessary for those in the areas with highest radiation levels to seek shelter for up to a month.

The heaviest fallout would be limited to the area at or downwind from the explosion, and 80 percent of the fallout would occur during the first 24 hours.

People in most of the areas that would be affected could be allowed to come out of shelter within a few days and, if necessary, evacuate to unaffected areas.

The danger of a massive strategic nuclear attack on the United States is predicted by experts to be less likely today.

However, terrorism, by nature, is unpredictable.

If there were threat of an attack, people living near potential targets could be advised to evacuate or they could decide on their own to evacuate to an area not considered a likely target. Protection from radioactive fallout would require taking shelter in an underground area or in the middle of a large building.

In general, potential targets include:

- Strategic missile sites and military bases.
- Center of government such as Washington, D.C. and state capitals.
- Important transportation and communication centers.
- Manufacturing, industrial, technology, and financial centers.
- Petroleum refineries, electrical power plants, and chemical plants.
- Major ports and airfields.

The three factors for protecting oneself from radiation and fallout are *distance, shielding, and time*.

DISTANCE: The more distance between you and the fallout particles, the better. An underground area such as a home or office building basement offers more protection than the first floor of a building. A floor near the middle of a high-rise may be better, depending on what is nearby at that level on which significant fallout particles would collect. Flat roofs collect fallout particles so the top floor is not a good choice, nor is a floor adjacent to a neighboring flat roof.

SHIELDING: The heavier and denser the materials – thick walls, concrete, bricks, books and earth – between you and the fallout particles, the better.

TIME: Fallout radiation loses its intensity fairly rapidly. In time, you will be able to leave the fallout shelter. Radioactive fallout poses the greatest threat to people during the first two weeks, by which time it has declined to about 1 percent of its initial radiation level.

Remember that any protection, however temporary, is better than none at all, and the more shielding, distance, and time you can take advantage of, the better.

VI. HAZARDOUS MATERIALS:

Agency response to incidents involving other hazardous material will be accomplished as per Standard Operating Procedure. Each deputy is issued a current emergency Response Guidebook for first responders during the initial phase of dangerous good/hazardous materials incidents. As incidents involving these materials occur, deputies will refer to this guidebook to determine the correct response. Response to these incidents will also be made in cooperation and coordination with the Rabun County Fire Department.

EQUIPMENT:

All equipment utilized by the Rabun County Sheriff's Office will meet the standard for the U.S. Department of Homeland Security's Science and Technology Division standards for first responder CBRN equipment.

Current Issued Equipment:

- Haz-Mat protective suit
- Gas mask
- Vionex hand sanitizer
- One box of latex gloves
- Disinfectant spray (kills staff, HIV, and other pathogens)



By Order of the Sheriff: **Chad K. Nichols**
Sheriff, Rabun County