

# TACDA ACADEMY - CIVIL DEFENSE BASICS

## 17. POST EVENT SURVIVAL

### 17.01 Introduction

**Post event survival is dependent upon pre-event preparations.**

The consequences of most all disasters can be rolled into the effects from a nuclear or chemical-biological (NBC) attack. People prepared to survive a nuclear attack are prepared for most any other disaster. We are directing this part of the lesson to survival after an NBC event.

All preceding lessons are rolled into this lesson. We are assuming that proper preparations have now been made against NBC warfare, and that shelters, survival equipment, and food and water supplies have been prepared. We are assuming those participating in this lesson have a knowledge of emergency sanitation, winter survival, cooking, alternative power sources and a basic understanding of survival without power and normal infrastructure capabilities.

### 17.02 Decontamination:

Occupants should remain in their shelters for at least two weeks. Each seven fold increase in time results in a 10 fold decrease in radiation levels. After leaving the shelter area, people should begin the process of reconstructing their lives and decontaminating their living spaces.

Radiological defense manuals, published by the government suggest hosing down or sweeping driveways and sidewalks, plowing and scraping radiation from the garden areas, vacuuming carpets and washing clothing in a washing machine. We question this logic. These procedures may be possible in a limited exchange and if there has been no loss of power by EMP. However, it seems much more likely that there will be no water in our water hydrants, no gasoline for our cars or tractors, and no power or water for our vacuums and washing machines. In a limited exchange, after leaving your shelter we suggest you evacuate the area and leave the decontamination efforts to the trained military experts.

Remember that time, distance and shielding are concepts that work in our favor. Shielding takes precedence during the first two weeks. After shielding for two weeks, a proper length of time has lapsed for you to leave your sheltered area. If you are within 1½ miles of ground zero, the environment may still be radioactive to depths of 5 feet below grade. When it is safe to do so, leave areas within 1½ miles of ground zero of a ground burst.

Fallout from airbursts is minimal. However, radiation from neutron activation may persist up to 5 feet below grade in areas near ground zero of an air burst. If you are within that area, you can either choose to remain in your shelter until further decay takes place, or you can travel to a safer distance from the contaminated area. Make sure before leaving, however, that you have a secure, safe destination with shelter and supplies to facilitate all members of your group.

### 17.03 Housing:

It would seem likely that there would be mass evacuations from areas of high fallout accumulation. Homes in low blast regions could still be used. Plastic and staple guns would be useful in repairing windows and doors.



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Heavy canvas tents, such as are used by the military, would be useful, as they will allow for the use wood stoves. People who camp and have the needed camping supplies would be much more likely to survive. Underground structures would not need heating or cooling. Shelters, as described in Lesson 3 (All Hazard Sheltering), could be lived in indefinitely.

Building materials could be scavenged from damaged homes. Construction will only be possible if tools (not power tools) had been stored in a safe place from blast.

### 17.04 TBA, Vitamins & Minerals:

Thyroid Blocking Agents (TBA) tablets should be started as soon after the nuclear attack as possible, and taken for 90 days. Purchase the TBA and consult your physician now, for proper dosages for you and your family. People with thyroid problems may not be able to take TBA, therefore make sure your physician is aware of any thyroid irregularities you may have. The thyroid is always 'looking' for iodine and cannot distinguish between pure iodine and the radioactive isotope. TBA fills the thyroid with healthy iodine and prevents the uptake of radioactive form of the isotope. The thyroid will only accept iodine in certain forms. TBA is formulated with potassium and the proper isotope of iodine. Do not take iodine internally in any other form. TBA is a medicine and has some side affects. TBA should only be taken in the event of a nuclear disaster.

A deficiency of vitamin C could cause symptoms of scurvy within 4 to 6 weeks. Store a year's supply of vitamin C as well as other multi vitamins and minerals. Purchase vitamin C in the crystalline form for long-term storage. Use sprouted seeds or beans as an expedient method in providing this vitamin. Instructions are given in the book "Nuclear War Survival Skills."

### 17.05 Gardening & Farming:

People living in areas of low fallout accumulation may be able to plant crops the next season. Fallout does not penetrate the top layers of the soil unless there has been heavy rain during the first two weeks. Small plots of land could be scraped of the upper few inches of contaminated soil and planted. The contaminated soil containing the fallout should be moved away from the garden area. Before re-entering your shelter, brush the dust off you equipment and clothing and wash exposed areas of your skin with soap and water. It seems unlikely that there would be any large farming activities for some time. People in low fallout areas that have received no blast may have opportunity to cover small plots with plastic before fallout arrives. Storage of large rolls of plastic would be advantageous.

Some plants requiring calcium (such as broccoli and cauliflower) will take up radioactive strontium 90 because of its chemical similarities to calcium. If we eat the food containing the radioactive strontium, the strontium will be deposited in our bones. Liming of acid soil will reduce this uptake. If possible, in areas of significant fallout deposition, plant foods with low calcium content such as potatoes, cereal, apples, tomatoes, peppers, sweet corn, squash and cucumbers.



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Storage of non-hybrid seeds is extremely important. Hybrid seeds will not reproduce quality fruit. Seeds last several years if stored covered in airtight containers in a cool, dry area.

Farming implements should be stored in a safe place and protected from blast.

Crops, which are in the early stages of growth in heavy fallout areas, may absorb radioactive materials through their leaves or roots and would be difficult to decontaminate.

If possible, animals should be put under cover before fallout arrives and should not be fed contaminated food and water. Farm animals can be slaughtered if they don't appear to be sick. The bones and organs, however, should be removed and disposed of before cooking the meat. The animal may have been foraging on plants and grasses contaminated with Strontium 90. Strontium 90 looks chemically much like calcium. The bone cannot differentiate between Strontium and Calcium and will deposit the Strontium into the bone. If we cook the meat with the bones, the strontium will then be deposited into our bones.

### **17.06 Hunting and Foraging:**

Eggs from poultry can be eaten. If the bird does not look sick, poultry can be eaten. Strontium, however, will persist in the bones. Deer, elk, and other wild animals can be eaten if they do not appear to be sick. Discard the organs and bones of all animals before cooking. Fish from streams and lakes, such as trout and perch can be eaten. Bottom feeders such as carp and catfish should not be consumed.

### **17.07 Food in a Post Event Environment:**

Many people are confused about the kinds of food that can be eaten after a nuclear event.

Fallout from a nuclear explosion consists of tiny particles of dirt and debris fused with fission products. Alpha and Beta particles in the fallout can persist for long periods of time and will contaminate all food to which it comes in contact. On the other hand, gamma radiation from the fallout is not a particle and does not contaminate food. Gamma radiation is actually used to purify food. Our challenge will be in differentiating between foods that can and cannot be cleansed and decontaminated of alpha and beta particles. Most gamma radiation will not persist beyond two weeks after the nuclear event.

Fruits and vegetables harvested from fallout zones in the first month post-attack may need to be decontaminated before consuming. Foods can be decontaminated by washing exposed parts, removing outer leaves and peeling. FEMA material has stated that most vegetables and fruits that can be washed and peeled can safely be eaten. If the nuclear event were to occur at harvest time, you could still harvest smooth, hard skinned vegetables and fruits such as apples, potatoes, carrots, squashes, and any other fruits and vegetables you could both wash and peel.

You should not harvest 'fuzzy' fruits such as raspberries, strawberries or peaches. Cauliflower and broccoli should not be eaten from the garden because of the uneven nature of their outer layers.



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### **17.08 Storage Foods:**

If fallout contamination is suspected, the package or can should be wiped or washed before opening. Meats and dairy products that are wrapped or are kept within closed showcases or refrigerators will most likely be free from contamination. Refrigerated foods should be eaten first, then food from the freezer as it thaws, and then packaged or canned foods.

### **17.09 Water:**

Water can be found in hot water heaters and wells. Hand pumps which will pump from as deep as 200 feet are available through Amish catalogs. Emergency water clarification, filtration and purification methods were discussed in a previous lesson. Take particular note in that lesson, of the expedient water clarification method utilizing clay, terry cloth and gravel for the filter. The clay acts to bind the radioactive particles, leaving the clarified water ready for purification. Use your imagination and be creative when foraging for water.

We cannot overly express the importance of storing a year's supply of food. The basic storage items, as suggested by Dr. Robinson, are easily and inexpensively purchased. Use that method as a basis for your storage.

### **17.10 Emergency Sanitation:**

During times of emergency, when normal sanitation methods of food, water, garbage, trash, and sewage may be disrupted, it is critical that rules and procedures be established to safeguard proper health or disastrous results may be experienced.

Proper management of toilet facilities during times of emergency may have a greater affect on your health than any other single element of sanitation. Bacterial infections such as typhoid and dysentery can be just as devastating as the earthquake or flood that caused the emergency. Refer to Lesson 10 (Sanitation) for further details.

### **17.11 Disposal of Garbage and Rubbish:**

Garbage may sour, decompose, breed bacteria, or attract insects and small animals; rubbish (trash) will not. Garbage, or any mixed refuse containing garbage, must be carefully stored and handled if odor and insect nuisances are to be prevented. Since rubbish (trash) alone is fairly easy to dispose of, garbage should be kept separate from trash.

Please review Lesson 10 (Sanitation) for further information on garbage, trash and sanitation methods.

### **17.12 Communications:**

It is likely that most, if not all, of the radio stations would be off the air. Blast and EMP would damage many radios, and power most probably would not be restored for long periods of time. Some small communities (in particular those on hydro power) could restore their power earlier than others.



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Amateur radio capabilities would be limited to high frequencies in the 40 to 80 meter range. High frequency radios are not dependent upon relay stations. Relay stations are vulnerable to EMP and would not be functional for relaying information. The very high frequency (VHF), two-meter and FM radios would be limited to 'line of sight' until relay stations could be restored. Hams typically keep spare parts and would have knowledge of EMP protection, which would put them on the air long before commercial units.

Several days after an EMP, interference will be minimal, and radios featuring AM frequencies should pick up stations as far away as Europe.

Underground steel shelters offer good (not perfect) EMP protection, and most radios require outside antennas to receive properly from inside steel shelters. Assuming your shelter is connected to the grid, however, you should receive a signal by holding a transistor radio (AM stations, only) near a power cord, even after the power grid has failed.

Many people have CB capabilities. Some of our chapters currently exercise a monthly for CB and amateur radio operators. Radiation levels and other important information could then be transmitted to other TACDA chapter members.

### **17.13 Heat and light:**

Diesel generators would be useful until the fuel was depleted. A battery system with solar panels for recharging, or a small hydro generator would be a more practical solution for long-term recovery. Wood or coal burning stoves and fuel storage should be part of every home's emergency systems. Coal stores well if placed between a straw blanket and covered with dirt. Please note that wood-burning stoves may not withstand the heat generated from coal. If your stove can withstand coal fuel it will be printed in the stove documentation material.

### **17.14 Transportation:**

Fuel would be difficult to replenish. Vehicles with computerized ignitions could be damaged by the electro magnetic pulse (EMP). EMP simulations have indicated that older cars manufactured before 1965, and newer cars manufactured after the year 2000 would probably remain functional. Bicycles, wagons, horses and carts would become very valuable. Please refer to the chapter lesson on 'Alternative Energy Sources' for further information.

### **17.15 Survival Skills:**

A wonderful source of information on survival skills is found in the before mentioned book, "Nuclear War Survival Skills". Instructions for six different expedient shelters are included along with directions for the construction of an inexpensive fallout radiation meter. Instructions are also given for the construction of an air ventilating pump, shelter furniture, emergency cooking stove, and other protective items.

