



UNIVERSITY OF IDAHO
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THE SAFEST PLACE



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THE SAFEST PLACE

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Where would be the safest place to go in your home or on your farm in event of natural or nuclear disaster?

This is a question most of us have asked ourselves as international relations blow hot and cold. Uneasily, we wonder just what we would do in event of nuclear emergency. The destructive power of nuclear weapons has given many people a feeling of hopelessness. This feeling among Idahoans is unnecessary when we consider the potential for survival of our population. It has been determined that the majority of our rural population could survive nuclear attack and return to productive living if every family would plan to use to best advantage that which is already on the farm or in the home. This means studying your home or farm, planning to use what is available, and improving your planning and preparations to gain maximum protection from radioactive fallout.

As we gain knowledge of the uses of nuclear energy we also learn of its limitations. By taking advantage of the limitations of nuclear energy and the delivery capability of a potential enemy we can survive a nuclear attack. There are four principles we can use to protect ourselves from radioactive fallout: time, shelter, distance, and decontamination.

TIME

From the moment radioactive fallout is formed it is decaying. This means it is losing strength. A rule of thumb: for every seven-fold increase in time, radioactivity decreases by one-tenth. The following table illustrates this principle.

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RATE OF DECAY OF RADIATION	7-10 RULE OF THUMB
Radiation rate one hour after nuclear explosion	1000 roentgens*/hour
Radiation rate 7 hours after nuclear explosion	100 roentgens /hour
Radiation rate 7 x 7 hours or 49 hours after nuclear explosion	10 roentgens /hour
Radiation rate 7 x 7 x 7 hours or 343 hours or approximately two weeks after nuclear explosion	1 roentgen /hour

*Roentgen is the unit of measurement of radioactivity.

The decay of radioactivity allows us to plan to resume our work or to begin re-habilitation of our farms in a reasonable period of time following nuclear attack. We should plan for maximum protection of our population and livestock for the first two weeks after nuclear emergency.

In addition to the protective measures we can take against radioactive fallout, we know that people and animals have some resistance to radiation and can survive even though they are not totally protected. Following is a table which illustrates this principle. The table is based on the estimated average percent of mortality of humans and farm animals at varying total accumulative doses of radiation.

PERCENT MORTALITY OF HUMANS AND FARM ANIMALS AT VARYING TOTAL ACCUMULATIVE DOSES OF RADIATION

	Percent mortality		
	0%	50%	100%
	Total accumulative dose expressed in roentgens		
Humans	300	450	600
Cattle	300	550	650
Sheep	350	525	700
Swine	350	600	800
Poultry	400	900	1200

This resistance suggests that since we can stand some radiation, we have a good chance for survival if we use the maximum protection available to us on our farms or in our homes.

SHELTER

Let's consider some of the alternatives for sheltering your family and livestock that may be available.

Look around your home or farmstead for a few minutes. Where would be the safest place? If you live in town the safest place will most likely be in your home. If you live on a farm one of the farm structures may offer more protection than your house, especially if you do not have a basement. Following is a list of some of the common structures found on Idaho farms and the probable amount of protection each would offer without improvement.

The amount of protection is expressed in a term called a Protection Factor, written Pf. A protection factor of 2 means that a person would get one-half as much radiation inside the shelter as outside and a Pf of 100 means that a person would get one one-hundredth as much radiation inside as outside.

Usually the best protection from disaster is afforded by the basement or cellar of a house. The basement of a frame house will provide a Pf of approximately 10 without improvements. However, a heavy ceiling over a shelter in the corner of a basement room, preferably an inside room, and either sand-bagging or placing sod over the windows of the basement, the protection factor may be raised to as much as 100.

There are many things that can be done to increase the protection offered by farm structures. The rule to remember is: **Increasing the total weight of material between the inside of a structure and the outside increases the amount of protection.**

DISTANCE

When you keep radioactive fallout outside the house or other building you take advantage of one of the principles of protection from radiation,—**distance**. The farther a person is from the source of radiation the less of it he will get. About fifty feet distance from radioactive fallout will decrease the amount of radiation by nearly one-half.

The protection afforded by the ground floor of any house or other farm building may be increased by hanging blankets over windows

THE PROTECTION FACTOR OF COMMON FARM STRUCTURES

STRUCTURE	(approximate) Pf
House, frame, main floor	2
House, frame, basement	10
House, 8-inch brick, main floor	3
House, brick, basement	10
Barn, two story, loft empty	2
Barn, two story, loft full of hay	4
Potato cellar, soil covered 6 inches deep	20
Pump pit, underground, plank ceiling	30
Trench silo, 16' wide 8' deep, no cover	4
Trench silo, 16' wide 8' deep, covered with tarpaulin (contaminated tarp thrown off after fallout quits falling)	25
Grainary, 5 bin, cribbed, empty	2.1
Grainary, 5 bin, cribbed, full of grain	7.3
Machine shed, cinder block, open front	1.6
Loafing shed, frame, open front 30 x 100	1.5
Garage, frame	1.8
Shop, cinder block, 24 x 42	2.0
Upright silo, poured concrete, 20 x 50 metal roof	50
Root cellar, below ground, soil covered 6" deep, 10 x 14 with shielded entrance	20
Cave, 45' long 5' wide	150
Cave, 45' long 5' wide, sheltered entrance or 90 degree turn	750
Milking parlor, cinder block, 3 stall and milk house	2.5
Hoghouse, frame, small	1.2
Large Quonset, full of stock	2.5

and doorways, placing mattresses in front of windows and doorways, or covering these openings in any manner that will prevent dust from entering. Fallout is like dust and will filter into a building if it is not kept out.

Sandbagging or stacking sod in front of a door so that a person must turn a 90 degree corner to enter the building will reduce radiation. Pushing soil up around buildings to a height of four feet or more will do much to protect those inside from radiation coming from the ground level. Sandbagging or cutting and stacking sod from the lawn on the main floor of a house over the portion of the basement to be used for shelter, will reduce the amount of radiation entering the basement from overhead proportionately to the weight of the sand or sod.

Stacking baled hay or straw around a building will increase protection, especially if it can be wet down with as much water as it will hold. The heavier a material the more protection it offers and the water in the hay will increase the weight greatly. However, the wet hay or straw may create a fire hazard from spontaneous combustion and should be removed after three or four days, especially during hot weather.

Increasing the soil cover of a potato cellar and pushing soil, or sandbagging in front of the doorway will increase the protection factor of the cellar. Placing an additional foot of soil over the roof of a below-ground well pit or pump house will increase the protection factor of that structure to about 120. (Warning—before increasing the soil cover over a structure, make sure the roof supports will hold the additional weight.)

Another factor to consider when inventorying your home or farm to determine the best place to go is **time**. Radiation decreases as time passes. Therefore, maximum sheltering should be planned for the first forty-eight hours. After this time survival is possible with less protection; however, the more protection available for the total of the first two weeks, the greater are the chances for survival.

DECONTAMINATION

Decontamination, a principal of protection from radiation usually considered only in re-

covering from nuclear disaster, has possibilities for increasing the protection afforded by some homes or farm structures. Washing fallout material off the roofs of buildings and away from them would increase protection by taking advantage of distance.

YOU CAN SURVIVE

Some of these suggestions are steps which many people could reasonably be expected to take during the time between receiving the warning of impending disaster and the arrival of radioactive fallout. However, some of the more time-consuming ideas could and should be accomplished in preparation for disaster. None of these ideas is costly, and most require only time and effort. A great number of rural people can be saved from nuclear attack if they will simply plan to use to the best advantage what is already available to them in their homes and on their farms. First consideration must be given to protection of rural families, for without people, agricultural production is impossible. Our rural population is vital to the production of food, feed, and fiber which in turn is vital to the nation's ability to recover from attack and defend our way of life. Obtain a copy of "Your Family Survival Plan" and "Your Farm Preparedness Plan" from your County Agent or your local Civil Defense Director. Use it to plan for your family's protection.

Inventorying what you have and planning for its use is your key to survival. Protection from radioactive fallout is our primary concern in Idaho. For those who wish to make more complete preparations for survival, much help is available from your County Agent and your County or City Director of Civil Defense. Call them for more information.

Additional Information Available:

1. U.S.D.A. Farmers Bulletin No. 2107 Radioactive Fallout on the Farm.
2. O.C.D.M. MP-15 The Family Fallout Shelter.
3. U.S.D.A. Home and Garden Bulletin No. 77, Family Food Stockpile for Survival.

4. DOD, OCD H-6, Fallout Protection, What to Know and Do About Nuclear Attack.
5. DOD, OCD L-12 First Aid Emergency Kit, Emergency Action.
6. PA-578 Your Family Survival Plan.
7. PA-583, Your Farm Preparedness Plan.
8. U. of I. mimeographed leaflet, Rural Preparedness for Idaho's Swine Producers.
9. U. of I. mimeographed leaflet, Rural Preparedness for Idaho Dairymen.
10. U. of I. mimeographed leaflet, Rural Preparedness for Idaho Beef Producers.
11. U. of I. mimeographed leaflet, Rural Defense for Idaho Poultrymen.
12. U. of I. mimeographed leaflet, Rural Preparedness for Idaho Crop Producers.