

Slow chemical reactions can occur between a steel shelter and the rocks in the soil surrounding it. These reactions often arise as a result of slightly different electrolytic potentials in the shelter and the rocks. They can be exacerbated by electric apparatus attached to the shelter such as pumps and motors.

Although very little total erosion of the tank surface usually takes place, it often is concentrated entirely at the points of best electrical contact between the tank and the soil. For this reason, electrolysis can literally drill a small hole in the wall of the tank. (This is the usual reason for leakage in those few underground fuel tanks that are actually found to need replacement.)

The sacrificial electrode consists of a bag of metal with an electrolytic potential such that the chemical erosion from electrolysis will take place on the metal in the bag rather than on the shelter surface. The bag is placed a foot or two away from the bottom of the end of the tank and attached with a copper wire (supplied with the electrode) to a clip welded to the top of the end of the tank.

Our plans show the wire attached, but do not give information about the method of attachment. It can be bolted tightly to the tank or silver soldered to the tank, but neither of these methods is optimum.

Recently a Fighting Chance supporter, who is also an electrician, has pointed out an ideal way to make this connection between the tank and the copper wire. It is called Cad-welding. The copper wire is held against the tank in a mold filled with copper oxide and aluminum. This metal is then ignited. The resulting chemical reaction produces molten copper and aluminum oxide slag that welds the copper wire to the steel. This is an excellent method of making this connection that will subsequently be buried under the soil where it cannot be easily monitored or repaired. Equipment to do this is available at professional electrical supply stores. Alternatively, since the mold and starting materials cost about \$100 and you may only need one or two welds, you may want to ask your local electrician to make this connection.

FIGHTING CHANCE SHELTER DISPLAY PARK

When we first started to advocate civil defense, Laurelee and I realized that we needed a composite display of civil defense shelters for both public and private use. We especially wanted to build a public-sized shelter that demonstrates what we advocate in the book *Fighting Chance* for mass production and installation throughout the United States.

Since we could not afford to build such displays, our much smaller family shelter has had to serve as an illustration to the many people who have come here to visit and learn about shelter technology.