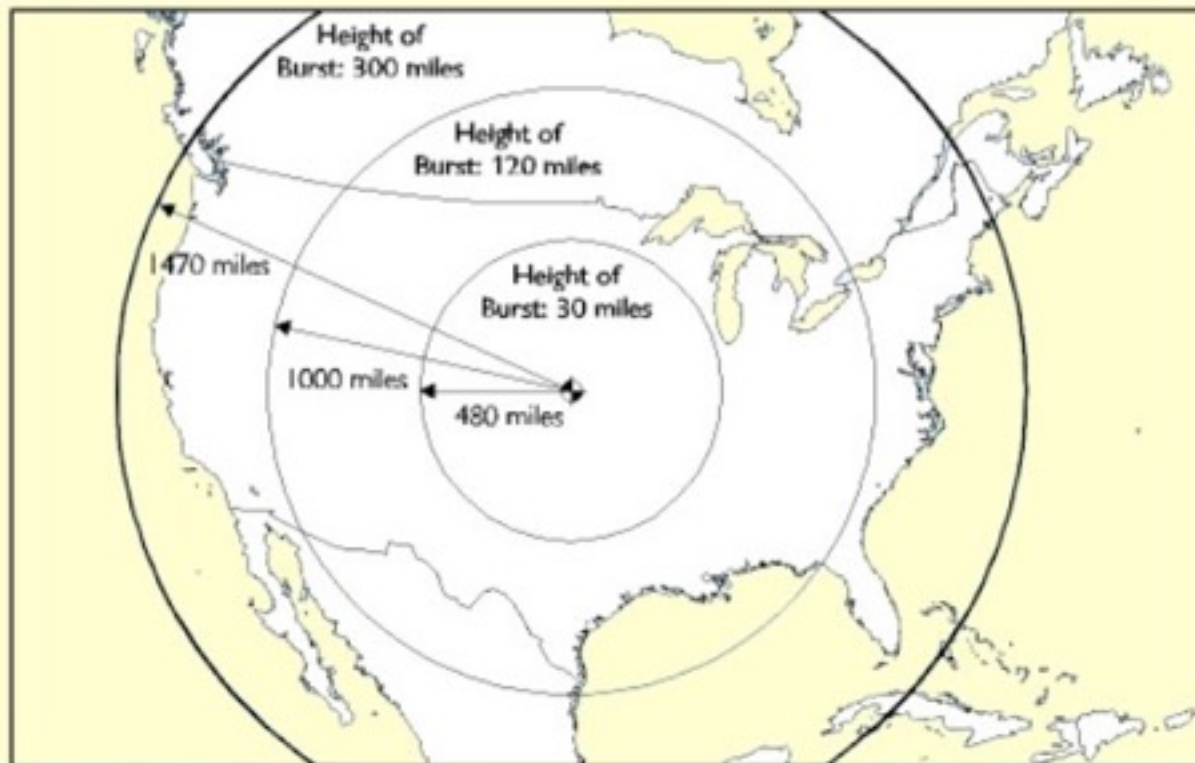


EMP & CME Factors....from [FactorReady.com](http://FactorReady.com)



**Area Affected by an Electromagnetic Pulse, by Height of Burst**

Source: Gary Smith, "Electromagnetic Pulse Threats," testimony before the House National Security Committee, July 16, 1997.

The EMP Commission concluded that a significant percentage of the U.S. population would perish from a massive solar storm or EMP attack that would cause widespread and long term loss of power. An EMP (Electro Magnetic Pulse) attack would be generated by the detonation of a nuclear device in our atmosphere and could effect the entire country, depending on height involved (see above chart). Such an explosion if sufficient strength could easily damage (unless protected) literally all of our personal electronic devices, vehicle electronics, power grids, etc. Damage would be by inductance to basically anything capable of carrying current, whether on or off, plugged in or not, as an EMP is a super strong radio type wave which would momentarily blanket the effected area with little if any warning. Boeing has also developed their CHAMP (Counter-electronic High-powered Advanced Missile Project) which is a high powered radio beam missile that can target specific areas. Other countries might duplicate this technology at some point in time. On the other hand, a CME (Coronal Mass Ejection) solar storm generated by our Sun could also damage our power grids, pipelines, disrupt communications, damage satellites, etc., but would be less likely to damage small electronic devices. Severe solar storms appear to occur every 150-200 years. One happened in 1859 for example, that did major damage to the U.S. telegraph wiring system, shocking operators and causing fires, etc. Canada experienced a major storm in 1989, and another was noted in 2003 that fortunately was not directed toward Earth.

## *EMP & CME FACTORS...from [FactorReady.com](http://FactorReady.com)*

Any severe damages to our national power grids could cause major problems for our modern power dependent society. It has been estimated downtimes could run 4 or more years as we do not produce or have on hand the approx. 370 major power transformers employed in our nationwide grids. Also, our 142 nuclear power plants could experience reactor melt down problems once no power available to operate cooling systems, etc. Another real danger to our power grids in general is possible take down by computer hackers attacking them.

Fortunately, you can take some steps to protect your personal electronic devices from EMP and CME factors by storing them in "Faraday Cages" when not in use. Granted, very few of us would bother to normally do this, but we do highly recommend you store your spare electronic items in this fashion, along with your portable generator. And make sure you include a hardwire type telephone, a AM/FM shortwave (with weather band) portable battery operated radio, a CB radio, and a Amateur Radio (such as a Ham band 2 meter or 2 meter/440 dual band handheld transceiver), and local police scanner, all under Faraday Cage or EMP Bag protection.

You can purchase Faraday Cages and/or EMP Bags from various internet sources, such as Amazon, etc., or make your own inexpensive Cages by...

1. Put the item to be protected in a plastic or cardboard box and wrap the box with aluminum foil. Even better, but that foil covered box in another box and then wrap the outer box with foil too. Note: remove antennas and batteries from any radios where that option offered.
2. Make a Faraday Cage by utilizing a galvanized metal garbage can with a tight fitting lid (such as a 6 or 30 gallon size) and line the inside (top, sides and bottom) with cardboard or other insulating material. Place items to be protected in the pail. Also, apply metallic duct tape outside around lid of can if it is not an air tight fit.
3. Some sources recommend grounding of the pail via a clamp on the pail handle with wire ran to a ground rod, while most say do not ground (as the ground wire could act as an antenna to feed RF into the cage). We chose to not ground accordingly. We also purchased an EMP bag large enough to house a portable generator.

### Further Suggestions...

A very informative book to acquire on EMP and CME subjects is "Disaster Preparedness for EMP Attacks and Solar Storms" by Arthur T. Bradley, PhD (a NASA electrical engineer). One versatile and economical AM/FM/Shortwave/Weather Band combo portable radio to consider is the Kaito Voyager KA500 or Voyager Pro KA600. Both offer 4-way power provisions including battery, built-in hand crank, built-in solar panel, or optional AC adaptor. A roll up long range wire antenna is an additional option. The 500 is analog dial and the 600 is digital dial. Eton and Sangean are also popular brands to look into. A FCC license is required to transmit on any Amateur (Ham) band, but no license is required to own a shortwave radio and listen in. Popular Ham radio 2 meter and/or 2m/440 hand held transceiver brands include iCom, Yaesu, Kenwood, Alinco and Wouxun, etc. No FCC license is needed for the 11 meter CB radio band. Cobra and Midland are popular Citizen Band brands among others. Uniden is a popular brand for police scanners. See our Amateur (Ham) Radio article under Downloads at our web page ([FactorReady.com](http://FactorReady.com)) for license information on this beneficial and rewarding hobby now enjoyed by over 700.000 Americans. This format is especially ideal for emergency communications.

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