EMP Shielded Solar Powered Pumphouse Overview

I want to shield my pumphouse and solar panels against EMP events.

As I visualize the system currently it will be a 4' x 8' x 7' high galvalume steel covered structure but with the bottom open.  I visualize a steel frame going a foot into the soil attached with earth augers.  The pumphouse will bolt to it providing electrical connection.  If the well needs to be pulled the cage will be unbolted and lifted off.  The interior framework will be wood.

The solar panels are mounted both above the steel roof covered in mesh and being able to be tilted up toward the south.  with another group also covered with mesh hanging on the south side.  I have found a source of .005 316 stainless 20 mesh screen.  It has over 75% opacity.

The structure will have lifting points at the top corners allowing it to be removed and set aside if the well needs to be pulled.

A steel exterior door with knob and lock will be at one end with a second inside door of mesh through a mesh wall inside, allowing ingress and egress without opening the cage.  The result will be a secure dry space where electrical components can be mounted on the wall and batteries can be set in racks.  The area around the well will be slightly above surrounding grade so water won't stand on it.

Illumination can be via a clear plastic or fiberglass section on the north wall with mesh over it.

Redundant microcomputers, charge controllers, and sine wave inverters will control everything and switch every day at midnight.

The design will incorporate a buried cistern which will allow pumping against only head pressure when solar power is available, with a second standard pressure tank and pump to handle the delivery plumbing.  The micro will sense the cistern level, the power available, the time of day and other factors to try to provide all the water possible   Currently I plan for 800 watts but can mount more panels nearby if needed.

There is room for a generator inside the unit for extended dark runs of days or when extra water is needed.

The microcomputer will sense everything including the AC sine wave of the inverter and control everything.  All switching will be at the zero crossing point.  The setup will provide a non-conductive serial link to a USB port on my PC.  The PC will display all the information about the system and warn if any exceptions occur.