

2009 GEORGIA SIMULATED EMERGENCY TEST (SET)

Background

Our modern electric grid, the interconnection of power generating stations with users, was established in the 1960's. It was designed with an approximate 40 year lifespan and therefore it is approaching its design life span and little has been done to refresh this resource.

In the 1960's, most electricity was generated and distributed locally and faults were problems of the local power company. With deregulation power could be bought and sold over long distances and companies turned from being local power providers to power brokers in an attempt to make increased profits. Infrastructure investment and renewal was not consistent with increasing corporate profit. Along with speculators getting involved the infrastructure was not sustained leaving us with a potent problem generated by neglect. In other words, power grids may be more vulnerable than ever since utilities have joined grids together to allow long-distance transmission of low-cost power to areas of sudden demand. It makes economic sense, but not necessarily geomagnetic or engineering sense. Interconnectedness makes the system susceptible to wide-ranging "cascade failures".

Grid reliability is dependent on improvement, enhancement, and timely replacement of components near the end of their lifespan. While the first two items have been realized to a degree through modern materials and computerization, the last, replacement of aging components, is often only accomplished after the item fails. Even computerization of the system can be a potentially fatal flaw. It is known that the system can and has been hacked demonstrating that malicious computer code could bring the system down.

Ideally, everything should flow smoothly through the grid and all the demand should be balanced with just the right supply. This is not real world since more often than not the grid acts like a street with ill-timed lights. Everyone is familiar of energy distribution problems during summer afternoons as air conditioners cycle on and off multiplied by one million. All this surging of supply and demand sometimes overloads the system.

Most people can name the biggest problem areas in our country: Southern California and its rolling brownouts and New England where the last major cascade failure took place. They are the poster children for a failing grid, but this type of failure it can happen just about anywhere.

Of particular interest to Hams is communication. Obviously, any disruption to the power grid will play havoc with communications. How long will phone / cell/ internet last in a power failure? The answer, of course, is it varies. Some systems have a generator back up; most do not. Batteries that provide limited back up for most home phone systems

typically last for 6-8 hours. These batteries used to be replaced every 5 years. Think of the savings by replacing them every 7 years as is the case now.

Even generators need a source of fuel. How do you refuel when you need power to run the pumps to get to the fuel? Anybody have an old-style hand-cranked pump you use to get fuel out of a 55 gallon drum? Even systems powered by natural gas require a pump to keep pressure in the line. There may be an abundance of fuel, but no way to access it during a power failure.

There are 2 questions that need to be answered:

- 1) How well are we prepared to deal with a sustained disruption of normal electric power?
- 2) Can we get prepared before sustained disruption of normal electric power occurs?

With no lights, phone, internet, microwave, refrigerator, etc, what communication capabilities do we still have? How will these capabilities be used? What are the best modes? How long can we sustain them? Every first Sunday of the month, the State ARES net encourages stations to check in on emergency power. Participation in this training activity varies. Some ARES members do not have a plan "B" if the lights go out. So, how well will we respond to a massive, sustained power outage? These are some of the questions we will explore in the 2009 Georgia Simulated Emergency Test (SET.)

The Drill

Concept of Operations:

Beginning on Friday evening, October 2, 2009, at 1900, simulate a total electrical failure. This is not to be carried to the point of becoming unsafe in any manner. Do not trip any circuit breakers or unplug your refrigerator (although you might think what would happen if you did.) Disconnect your amateur radio gear from any commercial power. If you need light in your shack, what do you have to provide light that runs separate from the grid! (Do you have a back up light source?) The drill will conclude Sunday evening, October 4, 2009, with your check-in to the State ARES net on whatever remaining power you have or 1900L. A local (EC-level) drill will be conducted sometime during this 48 hour event. The time and duration will be at this discretion of the EC or DEC.

Goals:

- 1) Explore each ARES member's capabilities dealing with a sustained power failure.
- 2) Determine how long your emergency power source will provide reliable communications.
- 3) Eat, sleep, and function without normal power (within limits.)
- 4) Determine which modes (SSB, FM, CW, DATA) work best.
- 5) Exercise your personal or family emergency plan for no power. (Hopefully you have one!)

- 6) Complete one emergency communication task directed by your EC in conjunction with your EMA
- 7) By Sunday evening, have confidence in your ability to handle a minor emergency.

Preparation Steps before the Drill:

Develop a personal contingency plan for a sustained power failure

Ensure you, your family, & any pets are part of this plan

Do you have special needs such as medications?

How will you eat?

What about refrigerated items?

HVAC issues.

Evacuation to a shelter?

How much fuel is in your car?

What will be your source of news and information?

What is your County plan for prolonged power failure?

Determine your communications capabilities in a power failure

How long will your emergency power source last?

How long will repeaters last?

Can you relay information via simplex?

Can you document message traffic?

Do you have a plan to contact ARES members when the phones and the internet are down?

Power restoration and return to normal operations:

Clean up of spoiled food

Shortages until normal supply lines reestablished

Psychological stresses

Execution of the Drill:

Friday 1900

Power Fails

Friday 2000

Outage appears to be a long event. Address family & refrigerated food concerns.

Friday 2030

It is getting dark. What will you use for light? HVAC concerns?

Saturday 0600

Power still off. The phones and Internet are inoperative. When might ARES communicators be activated? How?

Sunday 1900

Power is restored. Please try to make your report before 1900, not using commercial power or commercial communications systems. (Relays are fine!)

Sunday 1901

Drill is terminated. Begin recovery process.

A local drill will be conducted anytime during the 48 hours and will satisfy the intent of the overall drill. This allows the EC to be in charge of what works best locally and gives him/her the flexibility to work with the EMA on timing and duration. The drill should address some aspect of your local or County emergency plan that deals with communication during long-term power outages.

Evaluations:

Report List for All ARES Members to EC

Did you arrange a specific plan to manage your refrigeration of food? Y N

Were you able to prepare food for family in absence of power? Y N

Did you have drinking water for the period, excluding use of public supply? Y N

What did you use to power your radios? (Circle as appropriate)

Generator Battery Solar Other(describe)_____ -

If you used generator, how many hours can you run it now without purchasing additional fuel? ()

If you used Battery, can you recharge it without commercial power? How?

Generator Solar Other

What means did you use to make your reports?

FM (simplex) HF SSB CW Digital Other

Did you participate in a local drill with your EMA?

Do you believe you are better prepared to handle a power outage?

Your Call: County:

List other comments as appropriate:

:

Report for EC's and Designates, to DEC
(Include yourself)

How many Amateurs reported in with other than commercial power?
How many of these reported a plan to manage food refrigeration?
How many reported plan to prepare food for family?
How many reported adequate drinking water available other than public supply?
How many reported use of Generators? How many reported more than 24 hours of fuel?
How many reported use of Battery power?
Of these, how many reported ability to recharge battery without commercial power?
How many reported use of solar power to charge batteries?
How many reported other source of independent power?
How many reported use of FM (simplex)_____HF SSB_____ CW_____ Digital_____ Other____
Did you support a local drill with your EMA?
What was the scenario?

Number of members who believe they are better able to handle a power outage_____
Do your local repeaters have battery back up? Y N How long will they last?_____
Do your local repeaters have generator back up? Y N How long will they last?_____
Your Call: Your County(ies)
List other comments as appropriate

Report for DEC's and designates to SEC

Use of Winlink is encouraged (w4ayk@winlink.org), (first link by rf only)

How many EC's reported in to you? How many were not on commercial power?

How many amateurs reported in with other than commercial power?

How many of these reported a plan to manage food refrigeration?

How many reported plan to prepare food for family?

How many reported adequate drinking water available other than public supply?

How many reported use of generators? How many reported more than 24 hours of fuel?

How many reported use of Battery power?

Of these, how many reported ability to recharge battery without commercial power?

How many reported use of solar power to charge batteries?

How many reported other source of independent power?

How many reported use of FM (simplex)_____HF SSB_____ CW_____ Digital_____

Other_____

How many ECs conducted a drill with their EMA?

Number of repeaters on battery or generator back up_____

Your Call: Your District

List other comments as appropriate, including reports of included local drills.

SEC EVALUATION (Compilation of reports from DEC's)

How many amateurs reported?

How many EC's reported?

How many EC's had discussed the plan and potential problems with the local EMA before the event?

How many DEC's reported?

How many amateurs reported a specific plan (not necessarily an action) to handle the refrigerator and the deep freeze?

How many amateurs have ability to prepare food () and have water (no electrical pumps to fill the water towers after day 1!)? ()

How many amateurs used generators to power their radios? Of these, how many reported more than 24 hours of fuel available without buying more?

How many amateurs used battery power for their radios? How many reported ability to recharge batteries without commercial power?

How many amateurs used solar power to charge batteries?

How many amateurs used other means of power generation?

To make these reports how many amateurs used FM (simplex only)? ()

HF SSB? () CW? () Digital? ()

Other comments by amateurs including officers:

A careful study of the results should be published within a month, and would include comments made.