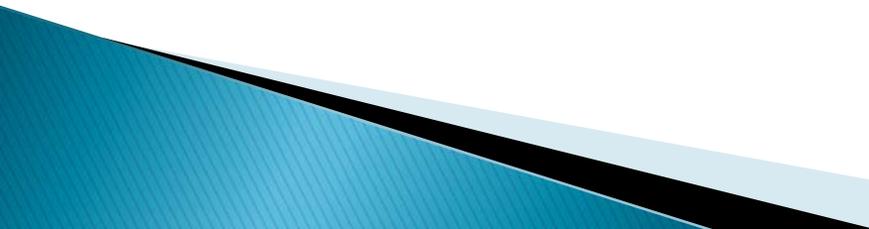


Emergency Preparedness and Energy Assurance

Brent Sires
and
Gene Soult

What Is Emergency Preparedness?

- ▶ Emergency preparedness is the capacity of individuals, organizations, and communities to respond to public health emergencies, such as natural disasters, severe weather, bioterrorism, disease outbreaks, mass casualties, and chemical or radiation emergencies.
 - ▶ A notable example of public health emergency in South Carolina was Hurricane Hugo. A more commonly occurring public health emergency in South Carolina involves power outages resulting from Ice Storms. Quick responses by individuals and organizations are required in order to minimize damage to lives and property.
 - ▶ Organizations, such as water and Wastewater facilities, should have plans and resources ready so you can respond quickly to ensure the safety of your facilities and responsibly bring your facilities back into operation.
 - ▶ It is incumbent of you to develop a comprehensive emergency preparedness plan.
- 

What Is Emergency Management?

- ▶ Emergency management is a dynamic Process:
 - Preparing for,
 - Mitigating impact,
 - Responding to,
 - Recovering from an emergency.
- ▶ Planning, though critical, is not the only component.
 - Training,
 - conducting drills,
 - testing equipment and
 - coordinating activities with the community are other important functions.

South Carolina Emergency Management Division

- ▶ **Who We Are.**
 - SCEMD is a division of the Military Department of South Carolina under the Adjutant General, but the Division reports directly to and advises the Governor during major emergencies and disasters.

South Carolina Emergency Management

▶ Why They Exist.

- South Carolina is vulnerable to all manner of natural and technological hazards with only two exceptions: tsunamis and volcanoes.
- South Carolina is potentially subject to acts of terrorism involving weapons of mass destruction.
- Cyber Security Threats involving loss of the Electrical Grid, Communications, and fuel disruptions

South Carolina Emergency Management

The Division is **not regulatory**.
Its primary role is **coordination
of state assets** in emergencies
and disasters.



South Carolina Emergency Management

▶ What We Do.

The Division develops, maintains, coordinates and leads the state emergency management program, enabling effective mitigation and preparation for efficient response to and rapid recovery from emergencies and disasters in order to:

- save lives,
- reduce human suffering, and
- reduce property loss.

ORS's role with the South Carolina Emergency Management Division

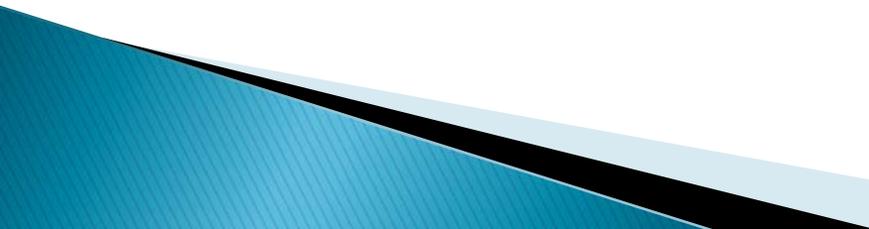
- ▶ ORS is the primary agency to ESF-12 Energy and is teamed up with representatives from State Energy Office; and the Public Service Authority (Santee Cooper)



What are our Responsibilities in ESF-12?

- ▶ Maintain communications with electric and natural gas utilities in responding to and recovering from emergencies:
 - electric generating capacity shortages,
 - electric generating fuel shortages,
 - transmission and distribution line outages,
 - electrical service outages affecting the public,
 - natural gas supply disruptions.

How Can ESF-12 Help You?

- ▶ Inform County Emergency Operation Centers (EOC's) of the severity of power outages in the County
 - ▶ Assist them in responding to utility partners such as Water/Wastewater facilities on the expected time of service restoration
 - ▶ When requested by the County EOC, coordinate with the respective utility the return of power to the Water/Wastewater facility
 - ▶ When requested by the EOC, assist a municipal or County operator in securing emergency back up power
- 

ORS's role with the South Carolina Emergency Management Division

ESF-3 Public Works and Engineering

Mission:

- ▶ To establish policy, procedures, and priorities for water resources, and sewer facilities, waste disposal and to provide for coordinating immediate and continued engineering resources, construction management, emergency contracting, and expertise following a disaster.
 - ▶ To provide an accurate assessment of damages, losses, and expenditures resulting from an emergency or disaster in order to determine the need for state and/or federal assistance and to conduct safety evaluations to protect the public health and welfare.
- 

How Can ESF-3 Help You?

- ▶ ESF-3 can provide back up power assistance
- ▶ Esf-3 also has an equipment asset inventory
 - This inventory includes such items as backhoes, chainsaws, etc.
- ▶ These assets are State assets and are shared with many of the State response agencies

SCEMD Generator Information Form

Facility Name: _____

Facility Address(or directions to the location): _____

Type of Facility: (i.e., hospital, water pumping, etc.) _____

Facility Manager and Phone: _____

Generator# _____ Location within the facility _____

1. Electrical Size:

A. Kilowatts: _____

B. Amperes: _____

C. Volts: _____

D. Phases: Single _____ 3-phase wye _____ 3-phase delta _____ Other _____

2. Physical Size: _____ ft. x _____ ft. x _____ ft.
(Complete if replacement)

3. Weight: Pounds _____ Tons _____
(Complete if replacement)

4. Fuel Type: Gas _____ Diesel _____ Other _____

5. Fuel Tank Type: Attached to generator _____ Separate Tank _____

6. Fuel Tank Size: Gallons _____ Pounds _____ Other _____

7. Base Support: Concrete Floor/pad _____ Skids _____ Trailer _____ Other _____

8. Receptacle Types: NEMA Code(s) _____

9. Starting Capability: Manual/Recoil _____ Automatic _____ Other _____

10. Weather Housing Needed? Yes _____ No _____

11. Electrician on Site? Yes _____ No _____

12. Other Information/Problems (ease of entry, location within facility, etc.): _____

EARTHQUAKE SCENARIO

Example—(7.3 Magnitude)

- ▶ **Affects on Electrical Customers**
 - Estimated 293,300 Customers without power,
 - Substantial damage to key area Generating Facilities (3–12 units)
 - Substantial damage to Substations (21–51) and downed transmission and distribution lines.
- ▶ **Affects on Nat. Gas Customers—**
 - Multiple Gas Leaks could exist (140–160)
 - Residential Customer Meter damage and leaks on affected homes (estimated 60,000 displaced homes)
- ▶ **Affects on Customer Transportation fuels—**
 - Substantial damage to Port facilities ((14)
 - Most of Charleston area fuel supplied through Port Terminals and Storage facilities
 - Substantial damage to area bridges (299) restricting fuel delivery efforts

- ▶ Organizations, such as water and Wastewater facilities, should have plans and resources ready so you can respond quickly to ensure the safety of your facilities and responsibly bring your facilities back into operation

Energy Assurance Plan

Gene G. Soult

SC Energy Assurance Plan (EAP)

ENCLOSURE -1

EAL-1: MONITOR & ALERT TABLE (green)

1.1 Electric Generation Stability	1.2 Petroleum Product Supply/Delivery	1.3 Natural Gas Supply Status	1.4 Propane or Essential Energy Related Products	1.5 SC-isac Cyber Security Status
Evaluate Historical Data for Trends/Compare Energy Provider Reports from ORS- Determine Required action	No Notification from SEOC 24/7 Desk that a County reported Gas/Diesel Shortages- or- Petroleum Association Reports Possible Delays, or Pricing Spikes Curtail Purchasing adequate Supply.	No alerts from SEOC 24/7 Desk concerning NG Shortages/EIA Trend Indicates there may be Regional Shortages	No Notification from SEOC 24/7 Desk of County Indicating shortage of Propane/ Energy Provider notifies of energy related products impacting energy supply chain	Notification from SC-isac Chief Security Officer of Cyber Security Alert that may impact Energy Related Sector
PROGRAM STEPS EAP-II.A,III. EAL-1.1 Initiate Call Tree-1, If necessary	PROGRAM STEPS- EAP-II.C, III. EAL 1-2 Initiate Call Tree-2, If necessary	PROGRAM STEPS EAP-II.B, III.EAL-1-3 Initiate Call Tree-3, If necessary	PROGRAM STEPS EAP-II.D, EAL-1.4 Initiate Call Tree-4, if necessary	PROGRAM STEPS EAP II.F,EAL-1.5 Initiate Call Tree-5, If necessary
SOP-ESF-12-III.A.3	SOP-ESF-12.III.B.4	SOP-ESF-12 III.A.3	SOP-ESF-12-IV.E,F.	SOP-ESF-12-IV.E,F.

Energy Assurance Plan Con.

ENCLOSURE -2

EAL-2: MILD ENERGY SHORTAGE TABLE (white)

<u>2.1</u> Electric Generation Stability	<u>2.2</u> Petroleum Product Supply/Delivery	<u>2.3</u> Natural Gas Supply Status	<u>2.4</u> Propane or Essential Energy Related Products	<u>2.5</u> SC-isac Cyber Security Status
Energy Provider Outage Reporting Exceeds 10% Outage Reporting in 2 Counties	Notification from SEOC 24/7 Desk of County Petroleum Problems- or- Petroleum Association Reports Supply Reduction of 5-10% for a 2 weeks,	24/7 Desk Alert that County Reports/ NG curtailed to Interruptible Customers, Energy Providers Report Intermediate Base Generation Affected	Notification from SEOC 24/7 Desk of more than one County shortage of Propane/ Energy Provider notifies of energy related products impacting energy supply chain for Electrical Generation	Notification from SC-isac Chief Security Officer of Cyber Security Elevated Threat to Energy Related Sector
PROGRAM STEPS EAP-III. EAL-2.1 Initiate Call Tree-1, If necessary SOP-ESF-12-III.C.,E.	PROGRAM STEPS- EAP-III- EAL-2.2 Initiate Call Tree-2, If necessary SOP-ESF-12.III.G Through I steps	PROGRAM STEPS EAP- III.EAL-2.3 Initiate Call Tree-3, If necessary SOP-ESF-12 IV.C.E	PROGRAM STEPS EAP- EAL-2.4 Initiate Call Tree-4, if necessary SOP-ESF-12-IV.F.	PROGRAM STEPS EAP-EAL-2.5 Initiate Call Tree-5, If necessary SOP-ESF-12-IV.F.

Energy Assurance Plan Con.

ENERGY ASSURANCE PLAN -ENCLOSURE -3

EAL-3: MODERATE ENERGY SHORTAGE TABLE (Yellow)

<p><u>3.1</u> Electric Generation Stability</p>	<p><u>3.2</u> Petroleum Product Supply/Delivery</p>	<p><u>3.3</u> Natural Gas Supply Status</p>	<p><u>3.4</u> Propane or Essential Energy Related Products</p>	<p><u>3.5</u> SC-isac Cyber Security Status</p>
<p>Energy Provider Outage Reporting Exceeds 20% Customers in any County served</p>	<p>Notification from SEOC 24/7 Desk reports Counties out of Gas/Diesel products, or- Petroleum Association Reports a moderate shortage of 10-15% in petroleum product supply for three or more weeks.</p>	<p>24/7 Desk Alert that County Reports/ NG curtailed to Residential Customers, Energy Providers Report Intermediate Base Generation curtailed</p>	<p>Notification from SEOC 24/7 Desk of more than one County shortage of Propane/ Energy Provider notifies of disruption of energy related products that will impact energy supply chain for Electrical Generation</p>	<p>Notification from SC-isac Chief Security Officer of Cyber Security Attacks has penetrated Critical Infrastructure Systems that impact the Energy Related Sector.</p>
<p>PROGRAM STEPS EAP-III. EAL-3.1 Initiate Call List-1, If necessary SOP-ESF-12-III.B,F. and L if Activated</p>	<p>PROGRAM STEPS- EAP-III- EAL-3.2 Initiate Call List-2, If necessary, provide Gas/Diesel Rationing Plan to Governor SOP-ESF-12.III.G Through I steps</p>	<p>PROGRAM STEPS EAP- III.EAL-3.3 Initiate Call List-3, If necessary SOP-ESF-12 IV.B.D.E.F and L if ESF-12 is Activated</p>	<p>PROGRAM STEPS EAP- EAL-3.4 Initiate Call List-4, Provide Media Briefings for Governor, if necessary SOP-ESF-12-IV.5.a-j.</p>	<p>PROGRAM STEPS EAP-EAL-3.5 Initiate Call List-5, If necessary SOP-ESF-12-IV.L, as required for Energy Provider Support</p>

Energy Assurance Plan Con.

ENERGY ASSURANCE PLAN-ENCLOSURE -4

EAL-4: SEVERE ENERGY SHORTAGE TABLE (Red)

4.1 Electric Generation Stability	4.2 Petroleum Product Supply/Delivery	4.3 Natural Gas Supply Status	4.4 Propane or Essential Energy Related Products	4.5 SC-isac Cyber Security Status
Energy Provider Outage Reporting Major Transmission Outages> 20,000 Customers in multiple counties	Notification from SEOC 24/7 Desk reports Counties out of Gas/Diesel products, or- Petroleum Association Reports a severe shortage of 20-30% in petroleum products that are affecting in-state supply.	24/7 Desk Alert that County Reports/ NG curtailed to Residential Customers in multiple counties/ Energy Providers Report NG Reserved Supply to Intermediate Base Generation cannot be met	Notification from SEOC 24/7 Desk of more than one County shortage of Propane/ Energy Provider notifies of disruption of energy related products impacting energy supply chain for Electrical Generation	Notification from SC-isac Chief Security Officer of Cyber Security Attacks have penetrated Critical infrastructure causing unreliable Generation service resulting in multiple outages
PROGRAM STEPS EAP-III. EAL-4.1 Initiate Call List-1, If necessary SOP-ESF-12-III.K.L.	PROGRAM STEPS- EAP-III- EAL-4.2 Initiate Call List-2, If necessary, enact Gas/Diesel Rationing Plan upon request of Governor SOP-ESF-12.III.G Through I steps	PROGRAM STEPS EAP- III.EAL-4.3 Initiate Call List-3, If necessary SOP-ESF-12 IV.B.D.E.F and L if ESF-12 is Activated	PROGRAM STEPS EAP- EAL-4.4 Initiate Call List-4, Provide Media Briefings for Governor, if necessary Assist in Preparing waivers for Energy Providers, if necessary SOP-ESF-12-IV.5.a-j.	PROGRAM STEPS EAP-EAL-4.5 Initiate Call List-5, If necessary SOP-ESF-12-IV.L, as required for Energy Provider Support

Energy Assurance Plan Con.

ENCLOSURE 5

EAL-5: RESTORATION (Blue)

5.1 Electric Generation Stability	5.2 Petroleum Product Supply/Delivery	5.3 Alternative Generation Supply Status	5.4 Emergency Backup Generation	5.5 SC-Cyber Security Status
<p>Energy Providers utilize detailed recovery procedures to protect employees, customers, the general public, and utility equipment, while systematically restoring their energy service.</p>	<p>No Notification from SEOC 24/7 Desk that a County reported Gas/Diesel Shortages- or- Petroleum Association Reports Possible Delays, or Pricing Spikes Curtail Purchasing adequate Supply.</p>	<p>Alternative Generation available to augment the recovery process. Santee Cooper operates the following LFG units 5.3.1 Anderson County 5.3.2 Horry County 5.3.3 Lee County 5.3.4 Richland County 5.3.5 Coastal Carolina Univ. 5.3.6 Georgetown County 5.3.7 Berkeley County</p>	<p>Emergency Generators play a key part in restoration efforts. SC has a number of EG's installed that may provide assistance: 5.4.1- Medical Facilities 5.4.2- EOC Facilities 5.4.3 SC-Schools 5.4.4 SC Fire Stations 5.4.5 Portable EG's –may be contracted for use</p>	<p>SC-isac and network providers utilize disaster recovery plans to restore their portion of the SC cyber network. SEOC coordinates between all ESF's to assist in restoration efforts.</p>
<p>PROGRAM STEPS 5.1.1- PEC Restoration Plan- EMG-Subs-0006. 5.1.2 DEC- Emergency Response Manual- 5.1.3 SCE&G- Emergency Response Manual 5.1.4 Santee Cooper- Emergency Response Manual- Initiate Call List-1, If necessary SOP-ESF-12-V.A.B</p>	<p>PROGRAM STEPS- EAP-II.C, III. EAL 1-2 Initiate Call List-2, If necessary SOP-ESF-12.IV.F.G-I Attachment-F.5-8, V.</p>	<p>PROGRAM STEPS EAP-III: EAL-5 Initiate Call List-5, If necessary SOP-ESF-12.V.A.</p>	<p>PROGRAM STEPS EAP-V. EAL-5.0, Appendix I Initiate Call List-5, if necessary SOP-ESF-12-IV.N.5/V.A</p>	<p>PROGRAM STEPS EAP-V Initiate Call List-5, If necessary SOP-ESF-12.V.B</p>