

# Drinking Water Systems Emergency Response – Generators

LDH OPH Bureau of Engineering

**Safe and reliable drinking water is important to every community. Emergency response planning is an essential part of managing a water system.**

# Louisiana Requirements

- ▶ LAC 51:XII.319.D.2 - §135.A of this Part [standby power] for any community water supply and non community water supply serving a hospital. A standby power supply shall be provided through a dedicated portable or in place auxiliary power of adequate supply and connectivity;
- ▶ LAC 51:XII.135.A - Standby Power Dedicated standby power shall be provided by any community water supply and any non community water supply serving a hospital so that water can be treated and/or pumped to the distribution system during power outages to meet the average daily demand during the month of maximum water use.

# Be Prepared – Plan Ahead

- ▶ Notify power company of critical needs – what facilities need power first?
- ▶ Fuel for generators
- ▶ Interconnections between neighboring systems

# Determine Backup Power Needs

- ▶ What are your critical needs to maintaining an acceptable level of service during power outages at your system?
- ▶ Critical need. Equipment essential to maintain public health protection (Pumps)
- ▶ Secondary need. Equipment that would enhance operation, but is not critical (SCADA components).
- ▶ Noncritical need. Equipment provided for convenience/comfort, but not essential (Pumphouse lights).

# Critical Need Electrical Equipment

- ▶ Determine:
  - Voltage
  - phase configuration and
  - horsepower/amperage requirements.
- ▶ Remember, electrical equipment **starting power demands** are usually **two to three times higher than their running demands**, which may dictate a larger generator.
- ▶ A licensed electrician can provide assistance in determining your backup power needs.
- ▶ List all your critical electrical equipment and their starting order to determine your required starting power.
- ▶ At a minimum, your generator(s) must have the capacity to supply the maximum starting power demands and the running demands of the connected equipment.

# Considerations:

- ▶ Fuel Type- Fuel type greatly influences emergency generator selection.
- ▶ Hook-Up Method - Connection methods include transfer switches and camlocks
- ▶ Location - Emergency generators must be able to withstand climate extremes and be able to operate under all conditions.

# Operation and Maintenance Tips:

- ▶ Exercise your generator periodically under the actual electrical load required of the unit to keep it ready for use
- ▶ Develop a “start and connect” checklist specific to each individual generator and keep it where staff can easily find it
- ▶ Do not operate the generator in excess of its rated capacity
- ▶ Be sure the generator is properly grounded
- ▶ Keep portable generators outside and at least 10 feet away and downwind from inhabited, enclosed areas to prevent the buildup of carbon monoxide fumes
- ▶ Maintain 3 to 4 feet of clear space on all sides and above a generator for adequate ventilation
- ▶ Perform scheduled maintenance as recommended by the generator manufacturer
- ▶ Incorporate fuel management into the maintenance schedule to ensure availability of clean, reliable fuel
- ▶ Do not refuel the generator while it is running, turn it off first and let it cool, especially if the generator uses gasoline
- ▶ Keep the generator dry by keeping it elevated and away from possible flooding
- ▶ Support electrical cords off the ground and do not let cords run through low-lying areas or puddles
- ▶ Replace any cords with damaged insulation
- ▶ Train all staff on how to operate the generator safely



# Emergency Generator Worksheet

## EMERGENCY GENERATOR INFORMATION FORM – Side 1 (complete prior to an emergency)

### Instructions – Side 1

- Get a licensed electrician to help complete this form.
- Fill out a copy of the form for each generator location.
- Store copy in multiple safe places (ERP, truck, offsite file).
- Share the form with LEPC, WARN or state primary agency.
- Update form periodically.

### Contact Information

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Day Phone: \_\_\_\_\_

Emerg. Phone: \_\_\_\_\_

System Name: \_\_\_\_\_ PWSS ID: \_\_\_\_\_

Street Address, City, and State: \_\_\_\_\_

Max Day Demand (MGD\*): \_\_\_\_\_ Avg. Daily Demand (MGD\*) \_\_\_\_\_

\* Million Gallons per Day

### Critical Utility Electrical Needs: (copy form as necessary)

Location (Name/#): \_\_\_\_\_

Location (Name/#): \_\_\_\_\_

Location (Name/#): \_\_\_\_\_

### Generator Needs: (copy form as necessary)

Location (Name/#): \_\_\_\_\_

Existing transfer switch: Yes \_\_\_ No \_\_\_; Existing 'add-a-phase' or 'roto-phase' unit: Yes \_\_\_ No \_\_\_

(These units convert a single phase line to a three-phase line)

Size of electrical main breaker: \_\_\_\_\_ Amps

System Voltage: 240 volt single phase \_\_\_\_\_ 240 volt three phase \_\_\_\_\_

208 volt three phase \_\_\_\_\_ 480 volt three phase \_\_\_\_\_

Major motors, in starting order, used for facility operations:

(example: 75 HP 2 Quantity 460 Volts 3 Phase)

\_\_\_\_ HP \_\_\_\_ Quantity \_\_\_\_ Volts \_\_\_\_ Phase

\_\_\_\_ HP \_\_\_\_ Quantity \_\_\_\_ Volts \_\_\_\_ Phase

\_\_\_\_ HP \_\_\_\_ Quantity \_\_\_\_ Volts \_\_\_\_ Phase

\_\_\_\_ HP \_\_\_\_ Quantity \_\_\_\_ Volts \_\_\_\_ Phase

Note: at a minimum, a generator must have capacity to supply maximum starting power demands and running demands of connected electrical equipment.

Existing concrete pad to locate generator? Yes \_\_\_ No \_\_\_ Distance of pad to connection point: \_\_\_\_\_

System meter kilowatt reading: \_\_\_\_\_

Generator Type (from AWWA Water & Wastewater Mutual Aid & Assistance Resource Typing Manual): \_\_\_\_\_

Additional comments: \_\_\_\_\_

\_\_\_\_\_

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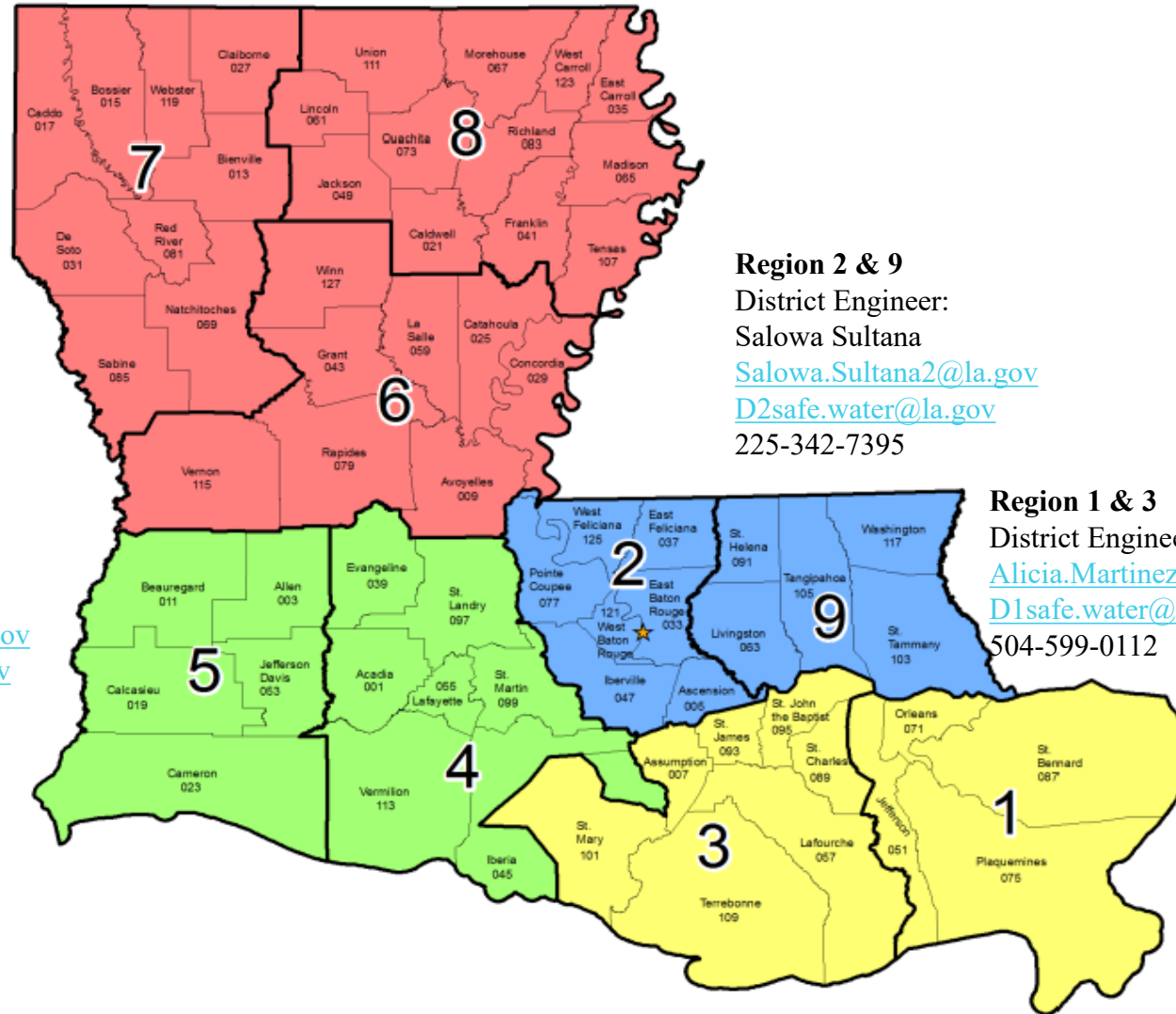
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**Websites:**

Engineering Services : [www.ldh.la.gov/engineering](http://www.ldh.la.gov/engineering)

Safe Drinking Water Program : [www.ldh.la.gov/SafeDrinkingWater](http://www.ldh.la.gov/SafeDrinkingWater)

Drinking Water Watch: [www.ldh.la.gov/drinkingwaterwatch](http://www.ldh.la.gov/drinkingwaterwatch)



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