STAND-BY GENERATOR SIZING

For Emergency Situations

Florida's hurricanes have taught us the wisdom of having stand-by power generation. So how many do you need? It's impractical to set hard rules for the size and number of stand-by generators. Determination of need must be site specific and tailored to each utility. Below is a list of issues to consider for your system.

- FRWA recommends that generators should be at least 2 to 2.5 times the total horsepower requirement.
  - Given that one horsepower is equivalent to 1.34 kilowatts, it would seem easy to quickly estimate power generation needs, but you need to take into account startup power, power factors, and lost amperage through wires. Generators tend to run longer, use less fuel, and overheat less frequently if they are taking a lower load.
- FDEP requires that water systems provide enough stand-by power (or by alternate means) to operate your water system *at least equal to the average daily water demand* per 62-555.320. This should include wells, treatment, and pumping.
  - Experience has shown that multiple power sources and/or water interconnects are not adequate for stand-by power following major hurricanes / storm events!
- FRWA recommends that systems join FlaWARN and *sign* the Mutual Aid Agreement, www.flawarn.org.
- We recommend wastewater treatment facilities and major lift stations have dedicated stand-by generation. Plus, ALL smaller lift stations should be equipped with power receptacles for connecting mobile generators and bypass piping!
- FRWA recommends that systems have one (1) mobile generator for every 6 to 10 lift stations – depending on whether a system has SCADA, by-pass pumps, septic pumper trucks, refueling tanks, and available staff to work around the clock.
- We recommend that all stand-by generators be mobile trailer mounted units (and equipped with adequate cable and quick disconnect plugs). Plugs should be standardized throughout your system and match surrounding systems. Staff should be well trained on how to disconnect main power before connecting stand-by generators.
- FRWA recommends that experienced electricians pre-wire panels and plugs. Hot wiring not preferred during emergency situations with lots of rain and wind.
- We recommend instituting a proactive preventative maintenance program for generators and to include this in your Emergency Response Plan – extended warranty, maintenance service contracts, security locks, stabilize fuel; storage; rotating equipment; checking tires/batteries, and capital replacement program.
- You should also expect generators' failure rate at about 10% to 20% during service.
- Do you need transfer switch and automatic exerciser? Do you need both 240 & 480 voltages? Is generator operation going to disturb people?

➔ Complete the form below & return to us for recommendations of size & number.

Should you have any questions or comments feel free to contact FRWA at Florida Rural Water Association – e-mail: frwa@frwa.net , phone: 850-668-2746 or fax 850-893-4581.

Name of Water / Wastewater System _____

E-MAIL Address _____

Address (Street, City, Zip) _____

PWS ID _____ or WW Facility ID _____

Send information for each piece of major equipment – **Horsepower, Voltage, Phase & Amps**

(If you cannot put all information on this sheet attach additional sheets)

Wells ~ description and number _____

Well Pump(s) – Horsepower _____ Volts _____ Phase _____ Amps _____

Well Pump(s) – Horsepower _____ Volts _____ Phase _____ Amps _____

Well Pump(s) – Horsepower _____ Volts _____ Phase _____ Amps _____

High Service / Transfer Pumps ~ description and number _____

Pump(s) – Horsepower _____ Volts _____ Phase _____ Amps _____

Pump(s) – Horsepower _____ Volts _____ Phase _____ Amps _____

Pump(s) – Horsepower _____ Volts _____ Phase _____ Amps _____

Other Equipment ~ description and number _____

_____ Horsepower _____ Volts _____ Phase _____ Amps _____

_____ Horsepower _____ Volts _____ Phase _____ Amps _____

_____ Horsepower _____ Volts _____ Phase _____ Amps _____

Office Building & AC - Volts _____ Phase _____ Amps (Breaker Capacity) _____

Maintenance Bldg & AC - Volts _____ Phase _____ Amps (Breaker Capacity) _____

Wastewater Lift Stations ~ description and number _____

LS #1 – Horsepower _____ Volts _____ Phase _____ Amps _____

LS #2 – Horsepower _____ Volts _____ Phase _____ Amps _____

LS #3 – Horsepower _____ Volts _____ Phase _____ Amps _____

Wastewater Plant Equipment ~ description and number _____

_____ Horsepower _____ Volts _____ Phase _____ Amps _____

_____ Horsepower _____ Volts _____ Phase _____ Amps _____

_____ Horsepower _____ Volts _____ Phase _____ Amps _____

_____ Horsepower _____ Volts _____ Phase _____ Amps _____

_____ Horsepower _____ Volts _____ Phase _____ Amps _____

_____ Horsepower _____ Volts _____ Phase _____ Amps _____

Comments: _____

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