

Committee on Water

Power Resilience and Black Sky Planning at Water Utilities

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Power Outages

Status of Puerto Rico Aqueduct and Sewer Authority (PRASA) Water Plants as of February 6, 2018

	Total	Out of Service	Alternative Power	Primary Power
Drinking Water Treatment Plants	114	4	56	54
Wastewater Treatment Plants	51	0	15	36




Power Resilience Guide for Drinking Water and Wastewater Utilities

- **Purpose**
 - Provide strategies to increase resilience to power loss
 - Promote coordination between water and electric utilities



<https://www.epa.gov/communitywaterresilience>

Power Resilience Guide for Drinking Water and Wastewater Utilities



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Communication

Step 1
Contacts

Step 2
Key Information


Step 3
Prioritization List

Step 4
Training & Exercises

Step 5
Public Outreach

Step 3 – Get on the Priority Power Restoration List









- Ask your electric utility who manages the power restoration prioritization list.
- Ask the agency or individual managing the list about your utility's prioritization status.
- Inform the agency or individual managing the list of your "storm-ready" capabilities and be sure that they understand the consequences to the community of drinking water and wastewater service disruptions.
- Inform the agency or individual responsible for the list of the critical assets at your utility that rely on grid power.



Case Study:

Dominion Virginia Power has worked closely with local Emergency Operation Centers (EOCs) to identify the 10-20 most critical services in each of the EOC's jurisdictions. Once identified, these critical facilities are further assigned Special Condition Categories, and water and sewage treatment facilities are considered "Critical Infrastructure". These "Special Conditions" accounts are flagged so Dominion knows instantly when a water or wastewater treatment facility loses power. An intranet application allows Dominion Power to remain focused on these locations to ensure critical infrastructure accounts receive the highest restoration priority.

In addition, during large-scale power outages, Dominion Power establishes Electric Regional Operations Centers to better manage their response. Water utilities have a direct line to these centers and to representatives of Dominion Power.

Communication 
Power Assessments 
Generators 
Fuel 
Energy Efficiency 
On-site Power 
Funding 
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Communication

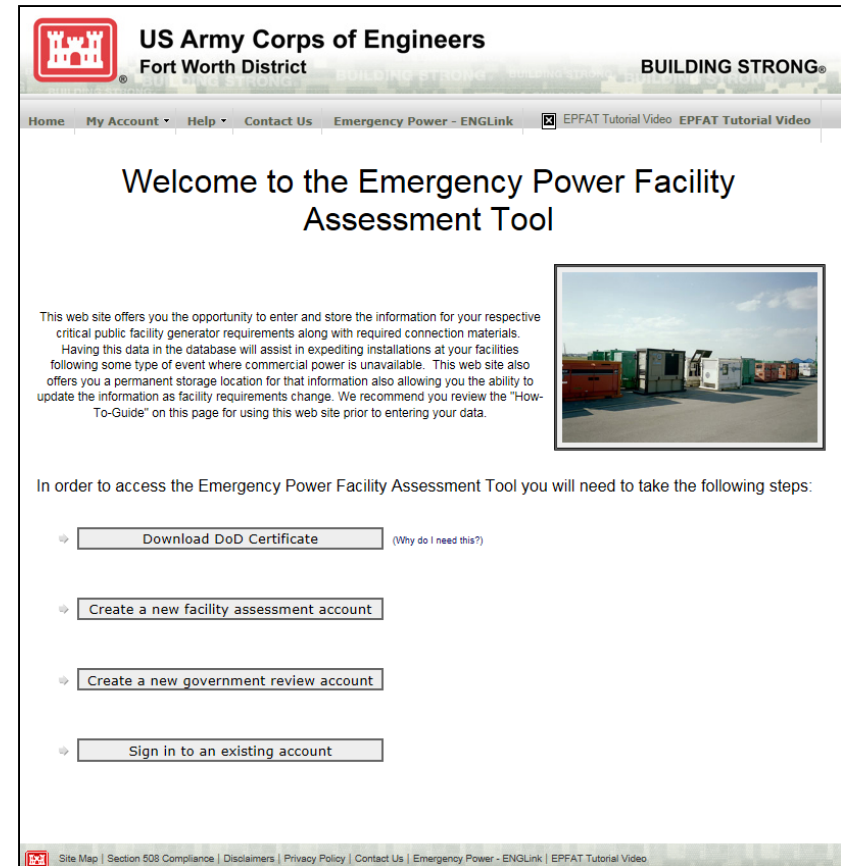
- Get your utility on the priority list for power restoration
- Have 24/7 contact information for your electric and gas utilities, emergency management agency, and EOC
- Verify that electric utility has physical locations of critical components





Power Assessments

- Determine power requirements for critical equipment during a power outage
- Use a qualified electrician
- Enter information into EPFAT





Generator Sizing

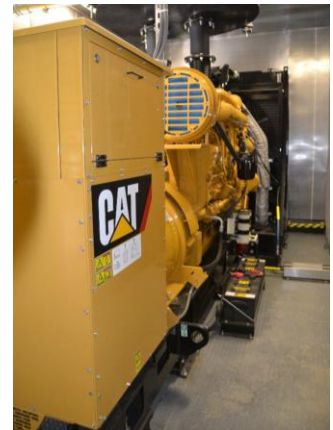
- Portable versus Stationary
- High and Premium-Efficiency motors and cross-line starting require higher starting currents
- Consider parallel units at larger sites





Generator Tips and Lessons Learned

- Exercise generator regularly
- Proactively go off grid before storm
- Have generator needs ready to share with EOC
- Keep small generators on trailers
- Keep basic supplies and spare parts on hand
- Have back-up for your back-up power





Fuel Supply Planning

- Local and statewide fuel supply planning
- Tank Sizing
- Incorporate fuel management into maintenance schedule
 - Clean fuel tanks
 - Gel and fuel additives
 - Fuel polishing unit
- Refill tanks
- Have multiple refueling options



“Power to Keep Water Moving” Video

- Highlights the importance of power resiliency at water utilities
- Shows how one water utility increases its resilience by paralleling generators at critical sites



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2018 Plans and Events

- **Four part webinar series – March to May 2018**
 - Fuel Supply Planning
 - On-site Power Generation and Microgrids
 - Air Regulations for Generators
 - Lessons Learned and Key Findings from Exercises
- **Update Power Resilience Guide (August 2018)**
 - Air Quality Regulations
 - Power vulnerability assessment
 - Fuel supply planning
 - On-site power generation
 - Black sky planning





2018 Plans and Events (Continued)

- **National Capital Region (NCR) Water Sector Black Sky Table Top Exercise (April 2018)**
 - NCR water utilities, electric utilities, local, state and federal agencies, and critical water customers
- **Hazard Mitigation and Power Resilience Workshops in Puerto Rico (Spring 2018)**
- **Water Sector Power and Black Sky Resilience Summit (September 2018)**
 - 2 day event in DC area
 - Water utilities, electric utilities, and local, state and federal agencies



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