American Academy of Environmental Engineers & Scientists

Woolsey Fire: A Water Agency’s Experience

October 17, 2019
LVMWD Overview

- Retail water and wastewater agency:
  - Potable and recycled water service
  - Wastewater treatment
  - Biosolids composting
  - Renewable energy generation
- 122-square mile service area
- Early adopter of water recycling, serving 20% of overall demands
- All potable water purchased from Metropolitan Water District
- Provide sanitation services, wholesale recycled water and composting through a Joint Powers Authority
November 8, 2018

- Major Santa Ana Wind Event
- 50 – 60 mph wind gusts
- At approximately 2:22pm SCE reported an outage near the Los Angeles and Ventura County borders (Chatsworth area) on the Santa Susana Field Laboratory property.
- Two minutes later at 2:24pm a small brush fire ignited, and because of the prevailing wind and the gusts grew, quickly
- At the same time down SR 101 (10 miles) in Thousand Oaks, the Hill Fire was burning and threatening homes and businesses
- Resources were spread thin and first responders began to be overwhelmed
Woolsey Fire Overview

• Mandatory evacuation of more than 295,000 people.
• Fire Jumped the 101 FWY on Nov. 9 at 4:30 a.m.
• Power outage across entire service area on Nov. 9 at 5:55 a.m., affecting 24 pump stations.
• Burned 96,949 acres and destroyed 1,643 structures and resulted in civilian 3 fatalities.
Emergency Response Actions

- Activated EOC at 4:00 p.m. and established Incident Command.
- Mobilized emergency generators and called for mutual aid.
- Requested and received additional flow/pressure from MWD via LV-2 Interconnection off West Valley Feeder No. 2.
- Developed and implemented emergency response priorities.
- Issued Customer Advisory (low pressure) and Boil Water Notice.
- Repaired water main leaks, fueled generators and shutoff services to 350 destroyed homes.
What Were We Doing?

- Monitoring our Distribution System
- Communicating with Incident Command
- Monitoring Social Media
- Shutting off connections to burned structures
- Fielding phone calls from customers
- Minimizing damage to infrastructure
- Communicating with tanks and pump stations
- PPE to personnel
2/3 of LVMWD Land Area Burned
Creepy Headquarters Morning
Emergency Operations Center
What We Saw...
Lessons Learned

- Activate early and apologize later (if necessary)
- Water agency personnel are first responders; be safe
- Set up 12-hr. shifts and send people home to rest
- Some chaos is normal, but try to manage it
- Request mutual aid before you need it
- Document from the start for FEMA reimbursement
- Test emergency generators under load periodically
Lessons Learned

• Send a representative to Fire Incident Command (IC)
• Explain importance of facilities IC Liaison Officer
• Issue public notices and updates without delay
• Emergency response is a sprint; disaster recovery is a marathon
• Social Media is essential to communication during a disaster
• Mass Notification System?
Increasing Risk of Power Outages

- Climate Change
- Natural disaster (earthquake, flood and wildfire)
- Severe weather conditions
- Excessive Power Demand
- Vehicle Accidents
- Excavation-related Accidents
- Public Safety Power Shutoffs
Water and energy are inextricably linked.

Energy and power production requires water.

Water production, treatment and distribution requires energy.

Effective emergency response requires BOTH water and energy.
Investment in Emergency Backup Power

• Evaluate all water and wastewater system facilities.
  o Natural gas backup drivers
  o Stationary generators w/automatic transfer switches
  o Mobile generators

• Implement more rigorous testing.
  o Exercise monthly; annual load testing
  o NFPA 110
  o SCAQMD Rule 1470 / CARB Airborne Toxic Control Measure
Planning a More Resilient Water System

- Greater degree of redundancy
  - Backup power for all essential treatment and pumping systems with automatic transfer switches
  - Interconnections with neighboring water systems
  - Larger amounts of gravity storage
  - Looped distribution systems w/isolation valves
- Participation in Mutual Aid Agreements
- Emergency Response Planning
- On-Site Fuel Storage and Delivery Capabilities
- Routine Maintenance and Testing of Equipment
- Emergency Contracts w/Key Vendors
- Improved Communication w/Power Utility Representatives
- Well-Trained Employees
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