
GAUGING YOUR FUEL SUPPLY FOR A NATURAL DISASTER OR EMERGENCY

by Mary Joyce Ivers and Jeffrey A. Tews

Does your fuel gauge show that you are full and ready for any natural disaster or emergency event? It is imperative that you plan, prepare and prioritize your fuel supply needs in the event of an unforeseen natural disaster or emergency. This emergency planning effort plays an important role in operations running smoothly, keeping the citizens and your employees safe, and mitigating potential hazards.

PLAN

Fleet managers must have a plan in place to ensure that emergency response vehicles and equipment are fully operational. A backup fuel plan may include agreements with a fuel supplier, retail station or other public agencies, or with rental equipment companies. If a hurricane or snow storm is eminent, plan ahead to fill the fuel tanks with available fuel supply. A best-management practice is to have a policy that on a daily basis the vehicles and equipment shall be on a keep-fill basis and not let the fuel tank go below half full. This is considered a “mini-fuel” supply. Having a mobile fuel truck with a 100-gallon fuel tank and dispenser may provide a quicker alternative for supplying fuel to the equipment.

Fleet managers take a calculated risk to balance the volatile cost of fuel with the fiscal responsibility of managing the fuel budget. In Ventura, Calif., the reorder level is when the onsite underground fuel tank level is below half to get the best truck and trailer delivery price. However, this



could be risky if there is an emergency or disaster. This is why Ventura has a contingency plan with the fuel supply contractor so that the levels of fuel meet the needs of the agency on a daily basis and at a moment's notice during emergencies.

The following contractual requirements are included in fuel purchasing contracts for fuel supplies during an emergency:

“In the event of a natural or man-made disaster, operations for the city and the contractor may be impacted. In the event of a declared emergency or natural disaster, fuel supplier contractor shall provide fuel as a high priority to meet the needs of the city's first responders for emergency response and public health and safety.”

The criteria considered for the selection of the fuel supplier was based on location to the city, contractor's facility with onsite fuel supply in underground tanks quantities for each fuel type, size of fleet truck and trailers, tank wagons equipped with wet hose, after-hours emergency phone and communication plan. The supplier offers 500-gallon, skid-mounted fuel tanks and dispensers that can be

delivered onsite for fuel distribution. In the event of a power outage at the fuel supplier facility, vehicles have the capability to pump fuel out of an underground tank and into a vehicle or mobile tank, as well as a backup generator power. The supplier must have a large supply network and a contingency plan for fuel supply to be delivered into the area. In California, having suppliers from both the north and south is beneficial because depending on accessibility of

roadways, there may not be a clear route if damage resulted from fire, flood or an earthquake.

Milwaukee has an aggressive program to make sure there is ample and viable fuel at all times, but especially for the winter season. The City has a provision in their fuel contracts that requires routine and emergency fuel deliveries to be made within six hours of receiving a request. Regular contact information is provided by the fuel vendors, along with emergency contacts and phone numbers. In addition, the condition of the fuel in all underground storage tanks is checked during August, with emphasis on looking for moisture and evidence of bacteria. Problems found are treated early to ensure a healthy supply of fuel for when the temperatures drop. Users of biodiesel especially need to be aware of a higher susceptibility to moisture with biofuels versus petroleum fuels. Special treatments made for use with biodiesel are available.

The fuel vendor should be made responsible to ensure that diesel fuel flows in the coldest weather. Milwaukee requires their fuel supplier to adjust the level of additives throughout the cold

months as needed to make sure diesel maintains a cold filter plug point (CFPP) of -30 degrees F, +/- 4 degrees F.

Having viable fuel in the underground tanks is important, but safeguards must also be in place to allow the fuel to be pumped in cases of an emergency such as widespread power loss. If there is an auxiliary generator for the shop, it should be wired to provide priority power to the fueling pumps, in addition to the basic shop needs. An electrical hook-up point can be installed that would allow a trailer-mounted power source to be spliced into the pump wiring, if needed. If the fleet operation has a fuel truck, the on-board fuel pump system may be configured to pull fuel directly from the in-ground tanks, for distribution directly to the hose or from the truck-mounted storage tank.

PREPARE

Proper planning and preparation by the fleet manager helps resume operations rapidly during and after the disaster or emergency event. Fleet managers must be prepared, especially if they rely on private retail stations or fuel card systems. Preparation, well-trained staff and communication are important aspects for fleets to respond to emergencies. Fleet managers must build relationships with each other to offer assistance or resources if needed. If fleet managers meet quarterly within their region, they can discuss many fleet issues including coordination of mutual aid plans. Building a relationship with the fuel supplier builds trust to ensure the fuel supplier will deliver and arrive when the demand for fuel is critical. This builds public trust to ensure the fleet is prepared.



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It is important to know the potential fuel needs of the agency to include vehicles, equipment and backup generators. Measure the amount of diesel fuel that generators burn when they are operating at an assumed full load for 24 hours a day. In an exercise with the water department, the amount of fuel consumption was calculated at 10,000 gallons per day for all the generators at critical sites. That is the same capacity of the diesel underground fuel supply for a city, not including fire apparatus and public works equipment. This would be the worst case scenario, but it was good to evaluate the needs and be prepared for providing a sufficient fuel supply for extended running of equipment or a plan for refueling.

PRIORITIZE

During a natural disaster or emergency, the Emergency Operations Center (EOC) Action Plan should include a list of fuel suppliers and emergency generator vendors who can provide rental equipment or repair and maintenance services. There may be conflicting requirements for the fuel and it is critical that the incident commander or the EOC director prioritize the fuel supply needs during the event. Some operations may be shut down to focus on other restoration of other essential services. The priorities should be discussed at the beginning of each emergency shift so that the fleet is prepared to provide assistance to other departments and to anticipate any



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fueling, maintenance or repair needs. Fleets can provide additional operators or deliver fuel from the mobile fuel trucks to the sites. Departments must

work together and not independently. During an emergency event, department lines within the organization become one, so that shared resources and

fuel supply plan in your agency. This document provides background on the issue and offers recommendations for providing fuel for essential public needs. It is available at http://www.apwa.net/be_involved/Be-an-Advocate, subtopic "Advocacy Priorities and Positions." □

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expertise help the recovery efforts. Planning, preparing and prioritizing the fleet and fuel requirements during an emergency event will mitigate hazards and potential worse scenarios and assist the first responders.

APWA has a position statement, "Establishing a National Priority System for Fuel Supplies," which may be used to support an emergency

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