

GREEN SHEET 72 HOUR REPORT



HOLLY INCIDENT

Fresno City Fire Department

Acute Carbon Monoxide Exposure

**Three firefighters and two EMS personnel
Transported and Treated**

November 25, 2008

Incident Number CA-FRN-0883051

The final investigation has not been completed and this is a Green Sheet summary report. It is intended as a safety and training tool, an aid to preventing future occurrences, and to inform interested parties. Because it is published on a short time frame, the information contained herein is subject to revision as further investigation is conducted and additional information is developed.

SUMMARY

The victim, a 43 year old woman, had been using a gasoline powered generator to power her home. When the victim did not answer her phone family members became concerned and went to the victim's residence. At the time of the incident, the family's initial concern were the fumes from the generator being used indoors however this information was not reported during the initial 911 call. The family members forced entry to the residence and found the victim unconscious in the bathroom. They immediately removed the generator from the house and shut it off prior to the initial 911 call.

The first 911 caller reported the victim lying on the floor in the bathroom and it was unknown if the victim was breathing. Engine 7 was dispatched while dispatch personnel began providing Emergency Medical Dispatch (EMD) instructions. E7 arrived in less than two and a half minutes but was unaware of the possible hazards due to the generator exhaust.

In the process of providing treatment crew members were exposed, within a single family residence, to CO levels at least ten times greater than the IDLH threshold (IDLH is 1,200 ppm). Readings after almost 30 minutes of positive pressure ventilation still showed levels of CO beyond the measurable limits of the meter, and O2 % in air as low as 19.5% (roughly 13,000-14,000 ppm of CO). Within six minutes of arrival on scene, one firefighter had lost consciousness and the other two were exhibiting signs of CO exposure while trying to perform their duties.

Three firefighters suffered moderate injuries requiring three rounds each of hyperbaric chamber treatment and two EMS personnel were treated for CO exposure at a local hospital.

CONDITIONS

Location:	2510 S. Holly
Weather:	Temperature: 52 degrees
	Relative Humidity: 87%
	Winds: N Northwest 1.0 mph
Atmosphere:	13,000 -15,000 ppm CO (after PPV)

SEQUENCE OF EVENTS

On November 25, 2008, at approximately 09:04 hours a 911 call was received for a victim down in possible cardiac arrest. Fresno Fire Engine 7 was dispatched at 09:05 and arrived on scene at 09:08 hours. . Medical treatment instructions were being given to family members on scene by EMS dispatch personnel for one-person rescue breathing. After just over three minutes on the phone the person assisting the victim stated, "I feel like I am about to pass out" and unknown to EMS Dispatch, was over come by CO inside the residence. She evacuated the building and handed the phone to another family member. The next family member was unable to help and advised EMS Dispatch he would not be able to render aid **(and also evacuated)**.

As E-7 arrived on scene they observed 2 adults on the front porch of the residence, one being a female adult who was clinging to a post on the porch. As the crew of E-7 approached, the female slumped down to the ground and became unresponsive. Specialist 7 tended to the adult female in front of the residence while Captain 7 and Firefighter 7 were directed by the other adult male at the front of the residence to the victim inside. Captain 7 and Firefighter 7 then entered the residence to render aid.

Captain 7 and Firefighter 7 made patient contact and found the patient to be pulse-less and non-breathing, and decided to move the patient to an open area in the living room of the residence to provide better treatment. Specialist 7 had determined the victim in front of the house was now alert and oriented and made entry to assist the Captain and Firefighter. The patient was placed on the ground in the front room and chest compressions were started by Firefighter 7 while Specialist 7 set up the AED. At the same time, Captain 7 left the patient to open windows and doors for ventilation due to an odor of exhaust.

When the AED was ready to analyze Specialist 7 asked Firefighter 7 to cease CPR and let the AED analyze. While the AED was analyzing, Specialist 7 noticed that Firefighter 7 looked fatigued. Specialist 7 asked Firefighter 7 if he wanted to switch positions to take over airway. Firefighter 7 stated he wanted to switch but then failed to move to the victim's head for airway management. Firefighter 7 then slumped over unconscious.

Specialist 7 then left the victim to tend to Firefighter 7. With assistance Firefighter 7 was able to get to the door where he again slumped down to his knees. Specialist 7 and the victim's brother assisted Firefighter 7 outside the front door to the stairs of the residence. Specialist 7 sat Firefighter 7 down upon the steps at which point Firefighter 7 slumped down onto the grass losing consciousness momentarily. Specialist 7 helped Firefighter 7 up and walked him to the front curb of the residence sitting Firefighter 7 on the ground. Specialist 7 and Captain 7 evacuated everyone from the structure and moved everyone from the front of the structure to a safe distance away.

INJURIES

E7 personnel were treated on scene and transported to Local Burn Center. Blood gasses were drawn showing significantly elevated levels of CO and personnel were treated for carbon monoxide poisoning in the hyperbaric chamber. EMS personnel were treated and released at another local hospital.

SAFETY ISSUES FOR REVIEW

- Carbon monoxide is a colorless, odorless, and tasteless gas.
- During cold months people close up their homes to keep warm in and cold out reducing ventilation, this is especially a concern in economically depressed areas where residents may resort to unconventional and dangerous methods to heat their homes.
- As firefighters we have all experienced at some point in our careers, the initial signs and symptoms of exposure to CO. Due to this experience we may feel that we will be able to recognize when we are being affected by CO. The fact of the matter is, in areas with high concentrations by the time the signs start to appear it can be too late to get out alive.
- Size-up is a continual mental process of evaluating what is known and seeking what is unknown