Rapid Lesson Sharing

Event Type: Carbon Monoxide Poisoning

Date: October 22, 2019

Location: ICP Medical Unit Yurt
Cow Creek Fire, Colorado

The Story

The Medical Unit Leader awoke with a severe headache, nausea and vomiting. He suspected carbon monoxide poisoning and moved out of the yurt, where he had been sleeping, into the cold morning air. He was taken to the nearest hospital, about a 45 minute-drive away, in one of the ambulances assigned to the fire in case his condition worsened while in route.

A couple days before, a brief winter storm had dropped a few inches of snow at the upper elevations of the Cow Creek Fire, resulting in below-freezing temperatures at the Incident Command Post, located in the town of Ridgway in a valley below the fire.

The day before, a diesel heating unit was installed to heat the Medical Unit yurt where the Medical Unit Leader was sleeping.

It was determined that because the (yellow) heating unit was placed next to a building with an overhanging roof, the unit's exhaust was trapped and cycled back into the unit's air intake, which was then pumped into the Medical Unit yurt with warm air. The yurt is seen on right in the distance; the generator is on right in foreground.

The heating unit was set up next to a building with a nearby overhanging roof. It appears the sinking cold night air trapped the unit's exhaust in a way that it cycled back into the unit's air intake, which was then pumped into the yurt with the warm air.

The contractor had come to troubleshoot concerns with the unit on more than one occasion the day before, but did not find any issues.

The patient was treated at the hospital and, within the hour, was released and returned to the ICP.

Learning Points

Carbon monoxide detectors are critical for early warning whenever fossil fuel burning heating units are used. Their installation may not be specified in contracts for heating units.

Other potential hazardous situations include sleeping in vehicles at night, tents set up close to generators, gas heaters used in tight quarters such as trailers, yurts and tents.

Symptoms of Carbon Monoxide Poisoning

Symptom severity varies depending on the level of carbon monoxide and duration of exposure. Mild symptoms sometimes are mistaken for flu.

Low to moderate carbon monoxide poisoning is characterized by:

- Headache
- Fatigue
- Shortness of breath
- Nausea
- Dizziness

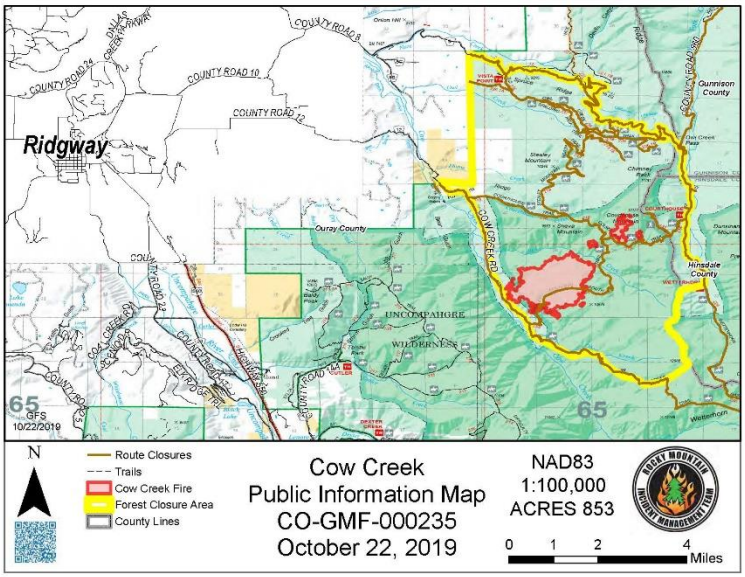
High-level carbon monoxide poisoning results in:

- Mental confusion
- Vomiting
- Loss of muscular coordination
- Loss of consciousness
- Death

If you think you are experiencing any of the symptoms of carbon monoxide poisoning, go outside and get fresh air immediately.

Taller exhaust stacks can better disperse harmful emissions.

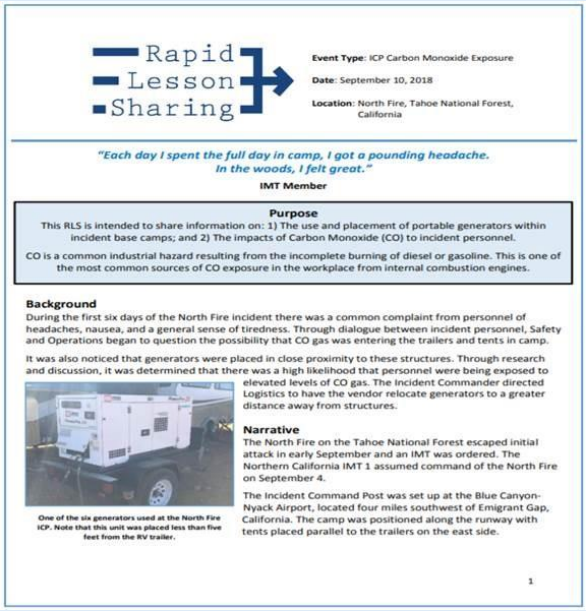
The National Institute of Standards and Technology recommends setting up generators outside as far from windows, doors and vents as possible.



This Has Happened Before

See the 2018 "North Fire ICP Carbon Monoxide Poisoning RLS" in which a generator's exhaust caused carbon monoxide exposure and poisoning in an ICP:

https://www.wildfirelessons.net/viewdocument/north-fire-icp-carbon-monoxide-expo



Rapid Lesson Sharing

Event Type: ICP Carbon Monoxide Exposure

Date: September 10, 2018

Location: North Fire, Tahoe National Forest, California

"Each day I spent the full day in camp, I got a pounding headache. In the woods, I felt great."

IMT Member

Purpose

This RLS is intended to share information on: 1) The use and placement of portable generators within incident base camps; and 2) The impacts of Carbon Monoxide (CO) to incident personnel.

CO is a common industrial hazard resulting from the incomplete burning of diesel or gasoline. This is one of the most common sources of CO exposure in the workplace from internal combustion engines.

Background

During the first six days of the North Fire incident there was a common complaint from personnel of headaches, nausea, and a general sense of tiredness. Through dialogue between incident personnel, Safety and Operations began to question the possibility that CO gas was entering the trailers and tents in camp.

It was also noticed that generators were placed in close proximity to these structures. Through research and discussion, it was determined that there was a high likelihood that personnel were being exposed to elevated levels of CO gas. The Incident Commander directed Logistics to have the vendor relocate generators to a greater distance away from structures.

One of the six generators used at the North Fire ICP. Note that this unit was placed less than five feet from the RV trailer.

Narrative

The North Fire on the Tahoe National Forest escaped initial attack in early September and an IMT was ordered. The Northern California IMT 1 assumed command of the North Fire on September 4.

The Incident Command Post was set up at the Blue Canyon-Nyack Airport, located four miles southwest of Emigrant Gap, California. The camp was positioned along the runway with tents placed parallel to the trailers on the east side.

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This RLS was submitted by: Incident Overhead

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