UCCS Safe Operating Procedure

7. CARBON MONOXIDE AWARENESS

(For assistance, please contact Environmental Health & Safety)

Carbon Monoxide (CO) is a poisonous waste gas resulting from the incomplete combustion of carbon fuels including charcoal, coal, diesel, gasoline, kerosene, and propane. Incomplete combustion and leaks in the heat exchanger may also cause CO to be released from heaters and boilers. CO concentrations at the exhaust manifold of internal combustion engines (lawnmowers, tractors, automobiles, ATVs, etc.) may exceed 15,000 parts per million (ppm). The safe occupational exposure limit for CO is 25 ppm; and the Immediately Dangerous to Life and Health (IDLH) concentration is 1,200 ppm. Unsafe levels can be reached in a few minutes without adequate ventilation.

Signs and symptoms of CO overexposure include headache, nausea, weakness, dizziness, mental confusion, hallucinations, cyanosis, and death. In cases of suspected overexposure, shut off the equipment, evacuate the area, and contact public safety immediately.

Procedures to prevent CO overexposure:

- Whenever possible, use electrical equipment indoors rather than equipment with internal combustion engines or fuel-powered heaters.

- Do not use equipment with internal combustion engines indoors without having the exhaust piped outdoors.

- If necessary to operate such equipment indoors and it is not possible to discharge the exhaust outdoors, ensure adequate ventilation by opening exterior doors and windows, use exhaust fans, and monitor CO levels during the activity.

- Ensure that equipment is running at optimum fuel/air mixture. Different kinds of engines produce more CO than others: Gasoline produces more than diesel, which produces more than propane.

- When operating such equipment indoors ensure the exhaust is not being drawn into the building's air handling system and spread throughout the building.

- Do not congregate behind running vehicles for meetings or to keep warm.

Last reviewed by Cynthia Norton on September 22, 2021.