



FALMOUTH VOLUNTEER FIREFIGHTER'S ASSOCIATION
FIRE AND EMERGENCY MEDICAL SERVICES
SAFETY BULLETIN

**SUBJECT: CARBON MONOXIDE &
 LEAD-ACID BATTERIES**

NUMBER:
 SB08-002

APPROVED:
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INITIATED
 01/2008

PREPARED:
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REVISED

Recently, Fairfax County F/R personnel responded to a Carbon Monoxide (CO) incident and encountered a unique situation that all personnel should be made aware of.

Upon entering the residence, the four-gas monitors went into alarm (>10ppm) with readings up to 50ppm of CO. Fire Department personnel and a gas company representative checked all appliances and found no leaks. The gas company representative asked if the fire department personnel had checked for a lead-acid battery power back up for a sump pump, which they had not.

A battery power back up was subsequently found in the basement being trickle charged. *It was then noted that the battery was overheating which caused it to release several hazardous gases; sulfur dioxide, sulfur trioxide, carbon monoxide, sulfuric acid mist and hydrogen.* (The Falmouth VFD has had similar incidents at the YMCA)

The gas representative reported that the combination of these gases could cause gas monitors to alarm with readings up to 1000ppm. Surprisingly, people who were exposed to these harmful gases reported no ill effects. If these gases are produced faster than they can escape, the pressure rises within the cells until a short circuit ignites the hydrogen – oxygen mixture. Such an explosion can cause severe personal injury.

Personnel should check for this occurrence whenever CO readings are noted, but a source cannot be found. Electric power shall be removed from any over-heated battery and proper ventilation performed until readings have decreased to normal levels. Personnel are also reminded to consider contacting the involved utility company for added expertise whenever a source is unable to be found. Disposal of such batteries shall be in accordance with manufacturer's recommendations.

This problem is not limited to sump pump back-up batteries. It can occur with battery-powered equipment such as forklifts, pallet jacks or man lifts.