

Date: Fri, 08 Jan 1999 10:09:44 -0600  
From: Meredith Brown <racer@lanl.gov>  
Subject: Yellow Alert: Carbon Monoxide in Breathing Air System

The following lessons learned was compiled from an occurrence report from ANLW in Idaho. It did NOT happen at Hanford but contains a particularly valid warning to all of us during these winter months.

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Project Hanford Lessons Learned

**Title: Carbon Monoxide Contamination in Breathing Air System**

Date: December 22, 1998

Identifier: 1998-RL-HNF-0037

**Lessons Learned Statement:** Vehicles should not be run inside buildings to warm up unless the exhaust is piped out of the building. This caution is particularly timely with winter weather upon us.

Breathing air systems should be monitored for contaminants to provide early warning to workers using them. In this case, an alarm prevented what could have been serious injury or death from carbon monoxide poisoning.

**Discussion of Activities:**

**Summary:** Breathing air at Argonne National Laboratory-West (ANL-W) was contaminated with 33 ppm carbon monoxide (CO). The OSHA limit for CO is 50 ppm and the immediately dangerous to life and health concentration is 1200 ppm. Personnel using air-supplied hoods at the time were evaluated by medical personnel and returned to work without permanent injury.

**Details:** The EBR-II Power Plant Instrument Air System supplies breathing air for buildings 752 and 765 at ANL-W on the Idaho National Engineering and Environmental Laboratory. The compressor for that system is located in Building 768, which also contains an area where large equipment can be parked. On December 17, 1998, a large lift truck parked inside Building 768 was started and allowed to warm up before being removed from the building. About 40 minutes later the CO monitor on the breathing air system alarmed with its indicator reading 33 ppm. Workers using air supplied hoods were notified and immediately stopped work. Two workers developed headaches. Two workers in building 768 not using breathing air reported seeing stars and feeling weak in their legs in addition to having headaches. All workers were treated at the ANL-W and INEEL dispensaries and returned to work that afternoon.

**Analysis:** The truck had been backed into the building, placing its exhaust within 50 feet of the intakes

for the Instrument Air Compressors. This was inadequate separation, especially with the closed environment of the building.

**Recommended actions:** Air systems supplying breathing air to facilities should review their winterization procedure to assure that the intakes of the Instrument Air Compressors are positioned so that they are free of equipment exhaust. Equipment operators should be reminded NOT to start vehicles indoors.

Estimated Savings/Cost Avoidance: N/A

Priority Descriptor: YELLOW/Caution

Functional Categories (DOE): Occupational Safety and Health

Functional Categories (Hanford specific): Instrumentation & Controls

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References: Occurrence report CH-AA-ANLW-EBR-1998-0002