

Date: May 29, 2002

Subject: Ames Yellow Alert: Improper Compressed Gas Practices

Title: Ames Yellow Alert: Improper Compressed Gas Practices

Lessons Learned Statement: Anyone needing a standard or mixed compressed gas is required to purchase the gas from a vendor. Custom blending gases is a practice reserved for commercial operations.

Discussion: On May 8, 2002, the Ames Laboratory was contacted by a vendor who reported that an Ames Laboratory compressed gas cylinder that had been returned for refilling contained a gas other than the labeled product. Two of the vendor's staff had been exposed to sulfur dioxide when they had processed a cylinder labeled as argon. Hand-written labels on the cylinder were found which identified the contents as 20% sulfur dioxide/ 80% helium.

An evaluation of the cylinder markings confirmed that the cylinder had come from an Ames Laboratory research group. Interviews with group members confirm that the group had blended the products into the cylinder.

All of the Ames Laboratory cylinders at the vendor's site were tested for suspect contents. Three additional cylinders were found with indication of tampering. The cleared cylinders were processed and returned to service. The suspect cylinders will be evaluated and returned to service or destroyed, depending on the contaminant found.

All compressed gas cylinders from the group were impounded, and will be tested to confirm contents. Notices of this discovery have been provided to Iowa State University's Environmental Health and Safety Office and the Chemistry Stores Office. Plant Protection Section has been asked to report any suspicious compressed gas cylinders discovered during the after-hours tours of the facilities. Materials Handling staff have been asked to report any suspicious compressed gas cylinders to ESH&A that they discover when delivering cylinders throughout the Lab.

Analysis: The blending of gases into compressed gas cylinders is a practice restricted to authorized facilities. An evaluation of the group's Readiness Review documents found no mention of blending gases back into cylinders.

Recommended Actions:

1. Cease all operations where cylinders of custom compressed gases are created by a research group.
2. Report all custom compressed gas creation practices to ESH&A immediately.
3. Initiate a Readiness Review for these operations, or request the reopening of existing Readiness Reviews where applicable.