CPSA 6

5/9/95

MEETING LOG
DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: Meeting of CO Detector Task Force 2: Field and Laboratory Testing of Detector Performance

PLACE: Gas Research Institute, 8600 West Bryn Mawr Ave., Chicago IL

MEETING DATE: 5/2/95

LOG ENTRY SOURCE: Donald W. Switzer DWS

ENTRY DATE: 5/8/95

COMMISSION ATTENDEES:

Donald W. Switzer ES

NON-COMMISSION ATTENDEES:

Greg Traynor	Lawrence Berkeley Laboratories
John Sutter	American Sensor
Frank Poskocil	Norther Illinois Gas Company
Lou Chavez	Underwriters Laboratories
Larry Huffling	Ranger Insurance Company
Bob Craig	System Sensor
Brian Schubert	New York State Electric and Gas Corp
Bill Spohn	Bacharach, Inc.
Ted A. Williams	Gas Research Institute
Tom Barakat	Seatt Corp.
Laurel Blair	Wheatley Blair
Wendy Gifford	First Alert
Paul Patty	Underwriters Laboratories
Jim Ranfone	American Gas Association
Nick Bellavia	First Alert

MEETING SUMMARY:

In June, 1994, a National Carbon Monoxide (CO) Workshop was held to identify consumer, regulatory, and industry needs to facilitate the use of residential CO detectors and to provide guidance to affected parties. Six Task Forces were formed. The scope of Task Force 2 is "To identify needs and develop recommendations for field and laboratory performance/testing of installed and portable CO detectors/alarms for consumer applications and response personnel."

The Gas Research Institute (GRI) provided a oral summary of recently completed testing on a number of CO detectors to "characterize CO/air response of the products. The following limitations apply to the testing:

1. The testing was not to check products for

conformance to the UL standard for residential CO detectors (UL2034).

2. The testing was not for product comparison.

3. The test conditions were not realistic.

4. The testing was not intended to resolve the "false alarm" issue.

A total fo 47 detectors representing 8 different products and two sensor types were tested at 50% relative humidity (RH) and 70 F. Test were run at 400ppm CO, 200ppm CO, 100ppm CO, 30ppm CO , and 15ppm CO. One detector alarmed as soon as it was energized, before exposure to CO. Three detectors alarmed before 8 hours exposure to 15ppm CO. Forty units alarmed well below the 10% carboxyhemoglobin curve when exposed to 400ppm CO as specified in the standard. The results of the testing will be published for public use.

GRI is planning follow-up testing to begin in Fall, 1995. This testing will examine the performance of a number of different sensor types in addition to the ones currently on the market. The purpose of the testing will be to ascertain long-term performance characteristics of the various sensor technologies. The test protocol and plans have not been completed. The results of this testing will also be published.

At the previous Task Force 2 meeting, six objectives were agreed upon. The status of these objectives are presented below.

1. Provide information on portable CO meters/analyzers

The purpose of this item is to provide information to first responders as to appropriate instrumentation to use in on-site CO investigations. Bill Spohn of Bacharach provided a summary of the types of available technologies currently employed. The Task Force agreed that it should limit its information to specifications of portable equipment, based on manufacturer's performance data. This information would be made available to fire departments, utilities, etc., to guide them in equipment selection.

2. Propose on-site field test(s) of detector/alarms for positive response to high CO

One CO detector manufacturer is selling a "Carbon Monoxide Detector Test Kit" for consumer use. This kit consists of a very small vial of highly concentrated CO and a plastic bag of known volume. The consumer seals the detector in the plastic bag with the vial and then breaks the vial, resulting in a substantial CO concentration in the bag. This approach holds promise as a quick check the consumer can perform to determine if the detector is

functional. This information will be provided to first responders.

3. Propose on-site test(s) of detector/alarms for negative response to low CO

The purpose of this item is to provide guidance to first responders as to tests that can be run on-site to determine if CO is actually present at low concentration. After much discussion, the Task Force concluded that there was no way to accurately determine if a detector was "false alarming" by testing the product in the field. It was decided that if the responders had accurate, reliable measurement equipment of their own, that would determine if low levels of CO were present. This goal will be deleted from future considerations.

4. Propose laboratory test(s) of detector/alarms to augment UL testing

As currently specified, UL 2034 does not examine CO detector performance at low relative humidities. The Task Force decided that a 15% RH test would be appropriate, considering that during the winter, RH levels are generally low. This test will be recommended to UL for inclusion in the standard.

5. Propose random field testing of existing detectors/alarms

This item originally considered taking detectors out of the field and testing them after some period of service. CPSC staff suggested that a number of residences be chosen in various parts of the country to have detectors installed with the understanding that the detectors would be removed at some later time for laboratory analysis. New detectors would be installed for removal at a later date. CPSC staff pointed out that this approach offers the advantage of being able to choose homes that meet a particular profile. Detectors would be chosen randomly.

6. Propose conducting a national or multi-regional studies on in-door CO concentrations

It was reported that the City of Pittsburgh, PA, has planned a CO concentration study to collect data on both indoor and outdoor CO concentrations, as well as patient diagnosis wherever a CO detector alarms. The results of this study will be used to identify actual CO levels, both in and out of the house.

The Task Force is not authorized to initiate any actions on its own. Its purpose is to identify and propose activities for other groups to undertake. The task force plans to meet again in late June, 1995.