



Division 08 **Health and Safety**

Chapter 01 – Atmospheric Monitoring Program

March 2009

POLICY

This General Order establishes procedures for the distribution, training, and maintenance of atmospheric monitoring instruments used by the Department.

DEFINITIONS

Departmental Standard Instrument - The standard instrument selected to be supported within the Atmospheric Monitoring Program. The Departmental Standard Instrument may change over time reflecting changes in technology. The current standard is designated as the RAE Systems QRAE+ PGM2000, three-gas instrument, equipped with Combustible Gas Sensor, Carbon Monoxide Sensor, and Oxygen Sensor.

PROCEDURES

1. Background

Various emergencies are encountered daily that require the use of atmospheric monitoring instruments to ensure the safety of both responders and the public.

The Atmospheric Monitoring Program establishes the structure of the program, distribution of the instruments, and guidelines for basic instrument use and maintenance.

The Goals of the Atmospheric Monitoring Program are:

- Distribute at least one Department Standard Instrument to each station and allow for the purchase of additional instruments by individual companies.

- Train personnel to:
 - Correctly and safely operate the equipment
 - Make informed decisions about the safety of the environment.
 - Understand additional atmospheric monitoring resources that are available.
- Provide a maintenance and exchange program to ensure that properly calibrated instruments are in service at all times in each station.

2. Respiratory Protection Plan

Fire/EMS Department personnel should not be significantly exposed to toxic gases as OSHA29 CFR 1910.134 mandates the use of respiratory protection in certain environments. Departmental policies mandate the use of SCBA while operating in any Immediately Dangerous to Life or Health (IDLH) environment.

The decision to remove respiratory protection is driven by the relative hazard that remains in the environment. The continuation of operations without respiratory protection shall only be considered when DETECTABLE levels of hazardous gases such as carbon monoxide, oxygen, and combustible gases are safe and appropriate.

No single monitoring instrument will detect all hazards in an atmosphere. Despite this limitation, the use of proper detection equipment provides a significant improvement in overall safety of personnel. Personnel operating in a potentially hazardous environment must not remove their



respiratory protection until the atmosphere is monitored and it can be proven. This can only be accomplished by the proper use of atmospheric monitoring instruments.

3. Indications for Use

Atmospheric monitoring instruments should be operated during the following incidents, including, but not limited to:

- Structure Fires, especially during overhaul
- Flammable Gas Investigations
- Flammable Liquid Spills
- Investigations of Unknown Odors
- Carbon Monoxide Investigations
- Technical Rescue Incidents, when appropriate
- Any other incident where respiratory protection is considered

4. Contraindications for Use

Atmospheric monitoring instruments should not be used in the following conditions, as damage to the instrument and sensors may result:

- Atmospheres with Organic Lead or Silica Compounds
- Atmospheres with Corrosive Vapors (Acidic or Caustic)

The use of atmospheric monitoring instruments other than the issued Departmental Standard Instrument can place personnel at risk due to differences in alarm levels as well as a possible lack of maintenance.

5. Distribution

The Hazardous Materials Response Program provides each station with one (1) three-gas

atmospheric monitoring instrument that meets the Departmental Standard Specification.

6. Instrument Maintenance

The Hazardous Materials Response Program supports the maintenance and calibration of Departmental standard instruments provided to stations and as outlined in this General Order. Additional units that are consistent with the Departmental Standard and purchased by stations will also be maintained as necessary. **Any other atmospheric monitoring equipment purchased will not be supported by this program and the responsibility for proper care, maintenance, and documentation lies with the station.**

To ensure that each instrument in service is as reliable and accurate as possible, Hazardous Materials Response Program personnel will calibrate each instrument monthly. To support this calibration with minimal out of service time, a maintenance reserve of instruments will be kept at the Hazardous Materials Response Program. Instruments received for maintenance will be exchanged with a reserve instrument when possible to ensure that atmospheric monitoring capabilities continue to be available.

Hazardous Materials Response Program personnel will coordinate the exchange of instruments.

7. Additional Purchases

Individual companies may purchase additional Departmental Standard Instruments to increase the number of instruments in their stations.

As individual organizations purchase additional instruments, the maintenance plan option must be selected at the time of the



purchase. There are two maintenance options available:

- **OPTION A - INSTRUMENT MAINTENANCE POOL**
 - The custody and care of this unit is conveyed to the Hazardous Materials Response Program to be incorporated into the Department's Atmospheric Monitoring Instrument Maintenance Pool. Exercising this option, the instrument will be exchanged along with the unit provided in the grant award. One (1) additional in service unit will be maintained and exchanged for this station. Hazardous Materials Response Program personnel will ensure that all maintenance, documentation, and exchanges are completed.
- **OPTION B - INDIVIDUAL MAINTENANCE**
 - The volunteer corporation will maintain the custody of this instrument. This instrument will not be exchanged with any instrument from the maintenance pool. The Hazardous Materials Response Program will provide prescribed maintenance and documentation; however, the instrument must be brought to Hazardous Materials Response Program personnel for service. This option will ensure that the unit is maintained appropriately; however, will create out of service time for the individual unit.
- The Atmospheric Monitoring Program Instrument Maintenance Plan Designation Form, Attachment #1, will document this selection. This form will be maintained in the inventory record for the instrument at

the Hazardous Materials Response Program.

8. Operational Guidance and Training

An operational guide for the use of the Departmental Standard Instrument has been developed. It provides the user with operational instructions for the instrument, appropriate responders action levels, and maintenance instructions for station level maintenance.

9. Responsibilities

Station Personnel

Station personnel that maintain custody of an instrument will be responsible for the following:

- Periodic (at least weekly) operational checks of the instrument.
- Replacement of batteries and water trap filters, when necessary.
- Proper use and interpretation of instrument on appropriate incidents.
- Notification and documentation of damage to the instrument to the Hazardous Materials Response Program.
- ***Damage resulting from improper use or negligence will be the responsibility of the station that had custody of the instrument at the time the damage occurred.***
- Coordination with Hazardous Materials Response Program personnel to ensure maintenance cycles and exchanges are completed on time and appropriately.
- Personnel are not to tamper with or otherwise damage the instrument.

Hazardous Materials Response Program



The Hazardous Materials Response Program will be responsible for:

- Overall coordination of the Atmospheric Monitoring Program Maintenance Program.
- Coordination with station personnel to ensure maintenance cycles and exchanges are completed on time appropriately.
- Perform all manufacturer recommended maintenance and calibration.
- Replacement of parts and sensors, when necessary.
- Documentation of all maintenance activities.
- Coordination with the vendor to ensure that all instruments are appropriately repaired, when necessary.
- Reporting overall program status to the Hazardous Materials Coordinator.

REFERENCES

N/A

FORMS/ATTACHMENTS

Attachment #1- Atmospheric Monitoring Program Instrument Maintenance Plan Designation Form

ORGANIZATION	
SERIAL NUMBER	
PURCHASE DATE	
INITIAL	MAINTENANCE PLAN OPTION
	<p>OPTION A – INSTRUMENT MAINTENANCE POOL The custody and care of this unit is conveyed to the Special Operations Division to be incorporated into the Department’s Atmospheric Monitoring Instrument Maintenance Pool. Exercising this option, the instrument will be exchanged along with the unit provided in the grant award. One (1) additional in service unit will be maintained and exchanged for this station. Special Operations Division personnel will ensure that all maintenance, documentation, and exchanges are completed.</p>
	<p>OPTION B – INDIVIDUAL MAINTENANCE The volunteer corporation will maintain the custody of this instrument. This instrument will not be exchanged with any instrument from the maintenance pool. The Special Operations Division will provide prescribed maintenance and documentation; however, the instrument must be brought to the Special Operations Division for service. This option will ensure that the unit is maintained appropriately; however, will create out of service time for the individual unit.</p>
<p>Either option will ensure that instruments that are in service are appropriately maintained at all times. Damage caused by user negligence or significant mishap will be the responsibility of the station that had custody of the instrument at the time of the mishap. Normal equipment loss/damage procedures will be followed by responsible supervisor and forwarded appropriately. All instruments will be delivered and put in service completely functional and properly maintained.</p>	

Volunteer Chief
Signature _____

Printed _____

Date _____

Special Operation Division Use Only	
PGFD Inventory Number	
HM Equipment Technician	