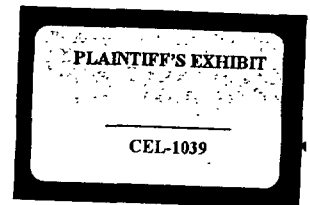


PAMPA PLANT
RESPIRATORY PROTECTION
PROGRAM



- 1.0 Scope
 - 1.1 This program establishes the minimum requirements for the selection, use, and maintenance of respiratory protection used for safeguarding employees against airborne contaminants, and oxygen deficiencies.
 - 1.2 This program does not apply to:
 - A. Mine and tunnel rescue work.
 - B. Protection against airborne radionuclides and radon daughters.
- 2.0 Responsibilities
 - 2.1 All levels of management are responsible for implementation of this program.
 - 2.2 Each supervisor, within his jurisdiction, shall assure that the selection, procurement, use and maintenance of respiratory protection is accomplished in accordance with the requirements of this program.
 - 2.3 The Purchasing Department shall ensure that respirators procured for plant use comply with the specifications listed in Section 5 of this program.
 - 2.4 Supervision shall ensure that a sufficient supply of approved respiratory protection for contaminants likely to be encountered, is provided and readily available, and that respirators are worn by the employees when required.
 - 2.5 Safety personnel shall be responsible for training each employee who may be required to use a respirator, as specified in Section 5.2.1 (H) of this program.
 - 2.6 The Plant Industrial Hygienist is responsible for certifying key personnel to provide employee training in respiratory protection. These certified personnel shall also handle or direct fitting, maintenance and repair of respirators.

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- 2.7 - The Industrial Relations Dept. shall provide a training course in respiratory protection to be used as a guide by employees and supervision.
- 2.8 The Plant Industrial Hygienist shall evaluate environmental control measures, approve respiratory protection programs, and monitor employee exposure to airborne contaminants.
- 2.9 The Industrial Relations Dept. shall screen employees who must wear respirators for physical impairments or complications which may cause difficulty in functioning safely and adequately when respirators are worn.

3.0 Hazardous Properties

3.1 In general, environmental respiratory hazards are of three types:

- (1) The air may contain one or more contaminants such as toxic gases or harmful dusts,
- (2) There may be an oxygen deficiency,
- (3) Or there may be a combination of contaminants and an oxygen deficiency.

For the first category, simple filter-type or chemical cartridge respirators are often adequate. However, if the concentration of a contaminant is high (usually more than ten times the TLV), or if an oxygen deficiency exists, supplied-air type respirators must be used.

4.0 Control Measures

4.1 General

- 4.1.1 Airborne contamination shall be controlled, to the extent feasible, by engineering control measures such as local ventilation of enclosure. Administrative measures and material substitution shall also be utilized, when applicable and practical, to limit employee exposure to airborne contaminants.
- 4.1.2 When engineering and administrative measures prove infeasible or inadequate in controlling air contamination, or when an oxygen deficiency exists, and during emergencies, employees shall be given and shall wear the required respiratory equipment.

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- 4.1.3 Respirators shall not be used as a substitute for the control of unsafe conditions or unsafe acts when engineering or administrative controls are feasible, except as an interim measure.
- 4.1.4 All areas requiring the use of respirators shall be properly identified.
- 4.1.5 An employee shall not be assigned to tasks requiring the use of a respirator unless the Industrial Relations Dept. has established, through physical examination, that he is physically capable of performing the task, without impairment, while wearing a respirator.
- 4.1.6 Frequent monitoring of the contamination levels to which workers are exposed, and periodic evaluation of the Respiratory Protection Program, shall be performed by the Plant Industrial Hygienist.
- 4.2 Respiratory Protection Program
 - 4.2.1 The following requirements are necessary considerations in a Respiratory Protection Program and shall be implemented.
 - A. Selection and Procurement
 - 1. The selection of respiratory protective equipment shall be based upon:
 - a. the nature and extent of contamination (or oxygen deficiency)
 - b. work requirements and conditions
 - c. characteristics and limitations of approved respirators
 - d. comfort to the wearer
 - e. cost
 - 2. Respiratory equipment used at Pampa Plant should be selected from that listed in the "Celanese Respiratory Protection Manual and Guideline."
 - 3. The Plant Industrial Hygienist shall be consulted for assistance in selecting protective devices when no respirator from the above document is suitable.

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B. Inspection

1. Employees assigned respirators for routine use shall inspect them before and after each use and during cleaning, as instructed by the Safety Dept.
2. The Safety Dept. shall regularly perform random inspections of personal respirators and shall inspect monthly all respirators placed in work areas for quick access (including emergency and other respirators not used routinely). Respirators stationed in work areas for quick access shall also be inspected before and after each use.
3. Records shall be kept of monthly inspections for all emergency-use respirators. The date of inspection and the findings must be indicated in these records.
4. Periodic checks of respiratory equipment remaining in stock shall be made to ensure that items such as canisters and cartridges have not exceeded their expiration dates.
5. The Plant Industrial Hygienist shall perform random inspections of respirators to ensure compliance with this program.

C. Maintenance

1. Routine maintenance of personal respirators such as replacement of cartridges, filters, or straps should be performed by the wearer after consultation with the Safety Dept. Only "approved"* replacement parts shall be used.
2. The Safety Dept. shall see that routine maintenance is performed on all non-assigned respiratory equipment as needed (This would include such maintenance as replacement of inhalation valves, hoses, etc.).
3. All non-routine repairs on personal and non-assigned respirators shall be performed or personally directed by the Safety Dept. or shall be referred to the manufacturer.

* See definitions

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D. Storage

1. Reusable personal respirators shall be stored in airtight plastic bags within rigid containers when not in use. Respirators shall not be stored unprotected in tool boxes or other areas where they may incur damage or distortion.
2. Respirators should not be stored in areas of extreme temperatures.
3. Emergency and non-routinely used respirators should be stored away from areas in which they are likely to incur damage but in easily accessible areas.

E. Cleaning

1. Reusable personal respirators should be washed thoroughly with soap and water after each use. They should then be dried and properly stored.
2. Non-assigned respirators must be washed, disinfected and dried by the user after each use.

F. Fit

1. Before a new type of respirator is assigned to an employee, the Safety Dept. shall perform a leak test to assure a good fit of the respirator to the wearer.
2. Eyeglasses shall not be worn under full-face respirators except where they have been properly installed in approved adapters and do not interfere with the face-to-respirator seal. Employees who need corrective lenses should not wear full-face respirators without these adapters and glasses, except during emergencies.
3. Contact lenses shall not be worn in contaminated areas where respirators may be worn.
4. Employees who may wear respirators shall not wear beards or sideburns which prevent a proper face-to-respirator seal.
5. Respirator wearers shall perform a simple leak test before entering a contaminated atmosphere.

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G. Use

1. Where respirators are required for routine use they should be individually assigned, if possible.
2. In confined spaces and other areas which might be subject to oxygen deficiencies or dangerous concentrations of toxic contaminants, the atmosphere shall be monitored before entry.
3. Oxygen Deficiency*
 - a. Where an oxygen deficiency exists, or may be expected, workers must wear an air-line respirator with auxiliary air tank, or a self-contained unit.
 - b. An attendant shall be present and located such that he is not likely to be overcome by an event affecting the wearer. The attendant shall have the necessary equipment for an emergency rescue.
 - c. Communications shall be maintained between all parties present.
4. Immediately Dangerous Atmospheres*
 - a. Where an atmosphere immediately dangerous to life or health may be expected, a self-contained respirator or an air-line unit with auxiliary tank must be worn.
 - b. In atmospheres immediately dangerous to life or health, persons wearing air-line respirators must be equipped with safety harnesses and lines.
 - c. At least one standby man shall be stationed outside the toxic atmosphere.
 - d. The standby man shall remain in communication with those in the toxic atmosphere. He shall have the necessary self-contained breathing apparatus and equipment on hand for emergency rescue.
5. Emergency Use
 - a. Adequate respiratory protection shall be kept easily accessible to facilitate the safe escape of all employees from

* See definitions

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areas in which immediately dangerous atmospheric contamination may occur.

- b. Emergency escape respirators should be of a type which is easily put on, such as a full-face canister unit or a plastic hood. These should be kept in the immediate vicinity of work stations subject to dangerous contamination or oxygen deficiency.
- c. Respirators used for emergency re-entry should be of the supplied-air type required for Immediately Dangerous Atmospheres. These should be kept immediately outside areas likely to be quickly contaminated. Additional units may be kept at a central location or on vehicles.
- d. Consideration should be given during emergency planning to assure that a fully adequate supply of breathing-air tanks is available, or that adequate refilling capacity exists on site.

H. Training

All employees who may have to wear respirators, either routinely or in emergency situations, shall be trained in the proper use of appropriate respiratory protection. This training shall include the nature of the hazard to which the employee is exposed and effective emergency procedures. Inspection, cleaning, maintenance and storage procedures shall also be included when the employee will be assigned a personal respirator.

5.0 Specifications

- 5.1 Respirators procured for use by Pampa Plant employees shall bear the joint approval of the National Institute for Occupational Safety and Health (NIOSH) and the Mining Enforcement and Safety Administration (MESA), unless such approved device does not exist for a specific case. In this event, the Plant Industrial Hygienist should be consulted.
- 5.2 Breathing-air and breathing-air compressors shall comply with specifications for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1966.
- 5.3 Protective hoods used in abrasive blasting shall comply with 5.1 above.

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- 6.0 Definitions
- 6.1 Administrative Measures - means of controlling employee exposure to contaminants by limiting the time allowed in the contaminated area, rotating tasks, etc.
- 6.2 Airborne Contamination - the presence in air of abnormal amounts of a substance which may cause harmful effects or create a nuisance.
- 6.3 Air-line Respirator - a respirator which supplies fresh air through a small diameter hose from a compressor receiver or from cylinders.
- 6.4 Approved - equipment approved by NIOSH-MESA for a specific purpose.
- 6.5 Assigned - equipment given to individuals for personal use only.
- 6.6 Auxiliary Air Tank - a small compressed air cylinder used for escape only.
- 6.7 Chemical Cartridge Respirator - a respirator equipped with special cartridges for removing specific gases or vapors from the breathing air.
- 6.8 Contaminated Atmosphere - air containing harmful or irritating amounts of a substance.
- 6.9 Extreme Temperature - temperatures low enough to make respirator parts brittle or high enough to distort the unit's shape.
- 6.10 Filter-type Respirator - a respirator employing a fibrous medium to mechanically remove solid or liquid particulate. Filters alone are inadequate for removing gases and vapors.
- 6.11 Immediately Dangerous to Life or Health - an area in which an unprotected person will immediately be overcome or will suffer severe delayed health effects due to exposure.
- 6.12 Non-Assigned - equipment available for use by more than one person.
- 6.13 Oxygen Deficiency - an atmosphere containing less than 20% oxygen.
- 6.14 Self-contained Respirator - a respirator supplying fresh air or oxygen from a cylinder or generating unit carried by the wearer.

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7.0 References

- 7.1 American National Standard Z88.2, Practises for Respiratory Protection.
- 7.2 American Industrial Hygiene Association and American Conference of Governmental Industrial Hygienists, Respiratory Protective Devices Manual.
- 7.3 Los Alamos Scientific Laboratory, Respirator Training Manual.
- 7.4 U.S. Department of Health, Education, and Welfare, National Institute of Occupational Safety and Health (NIOSH), NIOSH Certified Equipment.
- 7.5 U.S. Department of Interior, Bureau of Mines, 30 CFR, Part 11, Respiratory Protective Devices.
- 7.6 U.S. Department of Labor, 29 CFR, Part 1910.134, Respiratory Protection.

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