PROCEDURE BULLETIN — TEXAS CITY PLANT

P-0130

RESPIRATORY PROTECTIVE PROGRAM

PLAINTIFF'S EXHIBIT

MON-3164

I. PURPOSE

This bulletin establishes respiratory protection procedures to protect employees against exposure to chemical or physical contaminants encountered during normal and emergency conduct of their work.

II. SCOPE

This procedure covers (1) the maintenance of good breathing air quality, and (2) the selection, upkeep, and training in the use of respiratory equipment used in various parts of the plant.

The equipment and procedures specified in this bulletin are considered to be those required to maintain safe and healthy working conditions and to meet applicable government regulations.

III. BREATHING AIR SUPPLY AND DISTRIBUTION SYSTEM

A. Introduction

This procedure covers all users of compressed air used for personal breathing protection. Breathing air is supplied by a separate system consisting of three compressors devoted exclusively to breathing air service, located at the air plant, a system of analyzers to monitor air quality, and a piping distribution network which transports breathing air to the operating departments. Departments requiring breathing air, but not connected to the breathing air distribution system, shall use cylinder compressed breathing air or other methods approved by the Loss Prevention and Safety Department.

This procedure does not cover the utility or instrument air systems except to state the UTILITY OR INSTRUMENT AIR SHALL NOT BE USED FOR PERSONAL BREATHING PROTECTION.

CAUTION MUST BE USED AT ALL TIMES TO AVOID CROSS CONTAMINATION OF BREATHING AIR WITH ANY OTHER SYSTEM.

B. Responsibilities

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1. Air Supply

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Department 984, the Compressed Air Department, is responsible for the quality of breathing air supplied by the Plant Breathing Air System to the distribution header.

All tie-ins to the breathing air plant header must be approved by the manufacturing supervisor of the Compressed Air Department. Process Engineering must be informed to keep distribution piping drawings up-to-date.

The plant Stores Department is responsible for maintaining an adequate cylinder or trailer supply of breathing air for purchase by units not using the plant header. The contents of each cylinder, on receipt, shall be checked for oxygen concentration. Analysis shall indicate 21% + 1% oxygen for acceptance. Accepted cylinders shall be tagged and signed by the individual who conducted the analysis.

The Purchasing Department shall not purchase cylinder air from a supplier other than the Linde Division of Union Carbide without prior approval of the Loss Prevention and Safety Department. A change in supplier shall first require a letter of quality certification acceptable to the Loss Prevention and Safety Department. Acceptance shall also be based on inspection of the supplier's cylinder filling facilities.

2. Pipeline

The Compressed Air Department is responsible for the breathing air distribution header up to the battery limits of using departments, or up to, and including the first main block valve off the header. They shall safeguard the integrity of the distribution header system by a visual monthly inspection of the system to include structural integrity, unauthorized tie-ins, excessive corrosion, etc. A written report will be made to the Department head.

Using departments are responsible for piping systems from the header block valve and inside battery limits. Owners are responsible to see that the breathing air system is not contaminated from within an owner's system. They shall safeguard the integrity of the facility by using the breathing air system for personal breathing protection only. A monthly visual check, as per Procedure Bulletin P-0100, "Plant Safety Program," shall be conducted of in-battery breathing air lines.

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A written report will be made to the Department head. Owners are also responsible for conforming to installation and hose station standards.

C. Procedure

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Breathing air shall be piped to personal protective breathing equipment hose stations only. All such hose stations shall use the Schrader female quick disconnect single fitting (No. 4404C-197) or MSA Model No. 47370 manifold. The above fittings which match the standard issue breathing

air supply hoses, are obtainable from Safety Supply. These quick connect fittings shall be used in breathing air systems only.

Please be aware that Thor fittings are to be used on nitrogen hoses and hose stations only. Refer to Bulletin P-0126.

The breathing air system shall be identified according to the Texas City Plant color code procedure. The base color shall be blue and the stripe white. Each breathing air hose station shall also be identified by a sign reading "Breathing Air" which is obtainable from the Stores Department.

IV. RESPIRATORY SYSTEMS

A. Introduction

The Texas City Plant shall make conveniently available a type of respiratory protection equipment suitable for the work to be performed and those employees required to perform such work shall be required to use such equipment (See IV,C,1,i). No unprotected person shall knowingly be subjected to a hazardous environmental condition during the performance of the work assigned.

B. Responsibilities

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1. Department, Unit or Craft Supervision

Supervisors of persons performing work requiring respiratory protection are responsible to:

a. Inspect the work areas to evaluate possible exposure hazards and need for respiratory protective equipment. Specify applicable equipment.

b. Prepare and maintain written procedures for the selection and use of protective equipment and its proper care and storage.

c. Train employees in proper selection, care, storage, and use of respiratory protective equipment and maintain records of this training.

d. Inspect all respiratory equipment and maintain a record of these inspections.

e. Review all changes in scope of the work in progress for its impact on respiratory protection requirements.

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f. Insure the proper application of use, training, inspections, and record keeping as specified above.

2. Loss Prevention and Safety (LP&S)

The LP&S Department is responsible to:

a. Work with operating unit and craft supervision in the inspection of work areas to evaluate possible exposure hazards and need for respiratory protective equipment. Based on the inspection specify applicable equipment.

b. Provide respiratory protective equipment to the units and to repair, clean, inspect, sterilize, and seal packaging of masks returned to Safety Supply.

c. Train supervision in the use, care, and storage of respiratory protective equipment.

d. Maintain a log book record in Safety Supply on the "Self Contained Breathing Apparatus".

3. The plant physician shall determine that a person is physically able to use a respirator.

C. Procedures

1. Respiratory Equipment

a. Written procedures shall be prepared, in each unit, covering the selection and safe use of respirators in dangerous atmospheres that might be encountered in normal or emergency operations.

b. Employees will be trained by their supervisors in the proper use of the equipment. Refresher training will be given annually.

c. The person required to use the equipment must be able to demonstrate that a proper respirator fit can be obtained (See Sections C2 - Quantitative Fit Test and C3 - Respiratory Fitting).

d. Information pertaining to the respiratory devices and a guide to their selection will be maintained by the Loss Prevention and Safety section for plantwide and new applications. In addition, each department and craft shall maintain respiratory information

pertaining to their specific area, e.g., conditions of use for specific air contaminants regulated by 29 CFR 1910, subpart Z, in their operating or maintenance procedure manual.

e. Those individuals who must wear prescription eyeglasses to perform their work, and also are regularly required to use full face respiratory equipment, will be issued a full face respirator with special eyeglass inserts for their personal use. This equipment will be available from Loss Prevention and Safety at the specific request of the unit supervision.

f. In areas where the wearer of a respirator could be overcome by toxic or oxygen deficient atmosphere, a standby person must be nearby with suitable rescue equipment. In case of emergency the standby person should sound an alarm but not begin rescue operations until he has confirmed that help is coming with proper rescue equipment.

g. Respiratory equipment, stored in the unit, will be inspected monthly by owning department, per Procedure Bulletin P-0116, "Area Safety Inspections", and semi-annually by Safety Department personnel to assure that it is in satisfactory working condition.

h. Used equipment will be returned to Safety Supply for reprocessing. Disposable respirators are to be discarded after one use. The only approved disposable dust respirator is the blue tinted 3M No. 8706 for NSI use only.

i. Each unit, craft supervisor and PT Department shall keep current, a list of persons that are required to use respiratory equipment in the performance of their work. Update annually or when operating conditions change. A key consideration is the work being performed, not the general location of the work. An updated copy will be submitted to Industrial Hygiene annually by March 1. This list will determine persons to be fit tested.

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j. Each unit or craft supervisor shall keep current, a list of persons that are temporarily not physically able to use respiratory equipment and perform the work so they will not be assigned these tasks. Update annually or when operating conditions change.

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2. Quantitative Fit Test

Each employee who in his or her normal course of work might be subject to wearing a respirator will undergo quantitative fit tests by the procedures suggested in Appendix A6 of ANSI (American National Standards Institute, Inc.) standard No. Z88.2-1980 at least once a year.

3. Respirator Fitting in the Field

a. The purpose of any protective mask is to isolate the wearer from the surrounding atmosphere, by providing a leak-tight seal between the mask and the face. To insure the best possible opportunity for a good face piece to face seal, all employees who are required to wear respiratory equipment, must be free of facial hair protruding into the sealing portion of the respirator.

NOTE: A fit test will not be conducted on anyone not meeting this requirement.

b. Comments on respirator sealing problems:

1) A person who has facial hair (stubble, goatee, mustache, sideburns or beard) which passes between the face and the sealing surface of the face piece of the respirator shall not be permitted to wear such type of respirator.

2) A person who has a mustache, goatee, or beard which interferes with the respirator valve(s) shall not be permitted to wear the respirator.

3) A spectacle which has temple bars or straps which pass between the sealing surface of a respirator full face piece and the wearer's face shall not be used.

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4) A head covering which passes between the sealing surface of the respirator face piece and the wearer's face shall not be used.

5) A spectacle, a goggle, a face shield, a welding helmet, or other eye and face protective device which interferes with the seal of the respirator to the wearer shall not be allowed.

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6) Wearing of contact lenses in potentially contaminated atmospheres with a respirator shall not be permitted.

c. The user must test for fit each time it is put on.

d. The user must check for fit by the following methods:

1) Positive Pressure Test: Close the exhalation valve and exhale gently into the face piece. A slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal. For most respirators, this method of leak testing requires that the wearer first remove the exhalation valve cover and then carefully replace it after the test.

2) Negative Pressure Test: Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the seal(s). Inhale gently so that the face piece collapses slightly and hold the breath for approximately 10 seconds. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the fit of the respirator is considered satisfactory.

3) Manufacturer's Instructions: Follow the directions provided by the respirator manufacturer.

4) Movement Check: The employee using the respirator should also turn his/her head from side to side and up and down to ensure that the respirator is sealed and will not become loose during wear.

e. User must wear the respirator as originally designed:

1) All functional parts must be in place and worn in appropriate positions.

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2) All straps shall be secure.

3) Modification to the respirator straps shall not be made.

f. Users in areas having assigned personal respirators will use their assigned respirator in fit testing.

g. If special glasses are issued for use with respirators, they will be used in fit testing.

h. Dentures may seriously affect the face piece fit and therefore should be worn during fit testing and use.

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ATTACHMENT I

RESPIRATORY DEVICES AND GUIDE TO SELECTION

(To be used in conjunction with Respiratory Protection Program, Procedure Bulletin P-0130)

INTRODUCTION

Following are listed the various types of devices currently in use in the plant. Any new applications should be carefully considered and selection should be as a result of department supervision and Loss Prevention and Safety Department consultation. A guide to selection is included.

A. Self Contained Breathing Apparatus

1. Airline Respirators. Full-face and half-face maskes provide protection for those who must work for prolonged periods in harmful or objectionable atmospheres. They are not intended for use in atmospheres immediately dangerous to life or from which the wearer could not escape without respiratory protection.

2. Scott Air Pak. Intended for short term emergency work in contaminated atmospheres. Full-face mask with a cylinder of compressed air approved for one-half hour of continuous use when the cylinder is fully charged to 1980 or 2216 psi. Safely used in any atmosphere except that which irritates or poisons through the skin such as HCN, concentrated ammonia, ACY, etc. For the latter applications, it can be used in conjunction with vapor-proof suit, for short term emergency work in the contaminated atmosphere.

3. Robertshaw Escape Mask. Mask is equipped with a small container of compressed air which will provide a five-minute supply of breathing air. Because of the limited breathing air provided, use is limited to escape from contaminated atmospheres only.

4. Scott "SKA PAK" Five-Minute Escape Pack. Used in conjunction with supplied air respirator as an auxiliary self-contained breathing apparatus with full facepiece in positive pressure mode in IDLH atmospheres.

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Attachment I
Respiratory Devices and Guide to Selection Page 2.

B. Cartridge Type Respirators

A cartridge type respirator is worn generally when there is a possibility of exposure to a very light concentration of a harmful or irritating vapor. As in the case of canister-type masks, there are various kinds of respirator cartridges for various exposures. The cartridges contain the same material that is found in the canisters. "Comfo" respirators are presently in use in the plant. The cartridges are type GMA Organic Vapors and should be limited to use in atmospheres containing at least 19.5% oxygen and less than 1000 ppm or 10 times the PEL, whichever is less. Other types of cartridges, e.g., a combination organic vapor/radionuclides-type GMA-H, are available through the Lost Prevention and Safety Department.

C. Disposable Respirators

Two models of Minnesota Mining and Manufacturing (3M) Co. disposable respirators, Model 8712 for organic vapors and Model 8725 for organic vapors/acid gases may be substituted for the equivalent Comfo II cartridge masks.

D. Dust Respirators

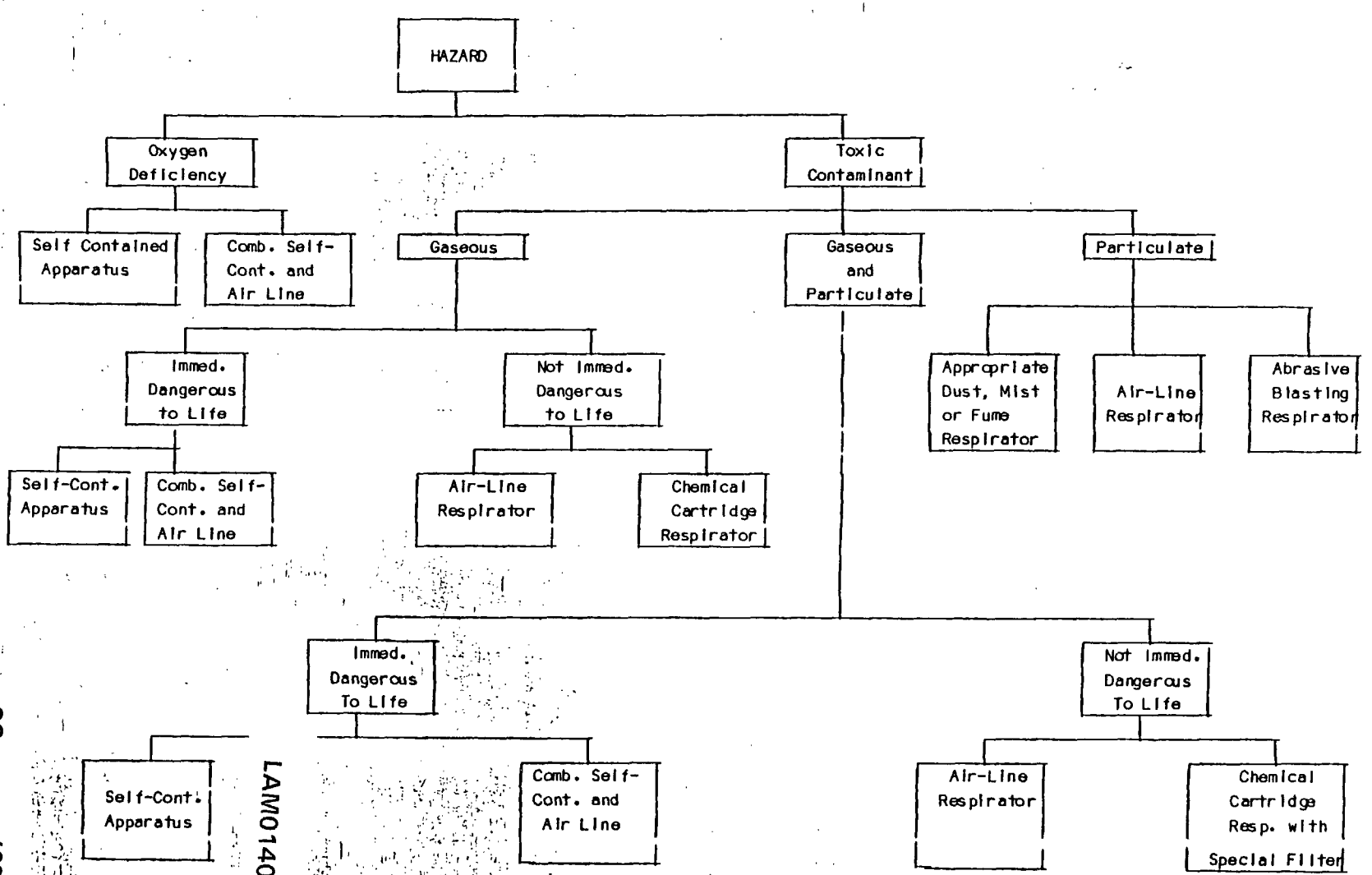
A mechanical filter instead of a cartridge is used with the Comfo II when exposure is to a dust which is irritating to the nose or throat or which may cause trouble in the bronchial tubes or lungs. The filter inserts may be replaced as they become clogged and restrict breathing.

E. Cloth Respirators

The only plant approved cloth respirator is the blue tinted mask No. 8706 made by 3M (Minnesota Mining and Manufacturing) which is used for NSI work only.

GUIDE TO SELECTION

Selection of equipment to provide respiratory protection should be made as a result of consultation between department supervision and Loss Prevention and Safety. Selection decisions should follow the logic diagram in Attachment II.



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