

RESPIRATORY PROTECTION PROGRAM

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RESPIRATORY PROTECTION PROGRAM

29CFR1910.134 (revised 9/06)

A. PURPOSE OF THE POLICY

In the scope of their duties, Engineers and maintenance employees may be exposed to ammonia above the Permissible Exposure Limit (PEL) and/or in emergency situations. Such situations may require qualified employees to use respiratory equipment, such as an air-purifying full-face respirator or self-contained breathing apparatus. Such employees will be properly trained, physically able, and able to understand when to use such equipment.

This policy outlines the minimum requirements of the Millard's Respiratory Protection Program. The Plant Engineer and General Manager are responsible for ensuring the program is implemented.

B. PROCEDURES FOR SELECTING RESPIRATORY EQUIPMENT

Respirators will be provided to employees and will be of the type applicable and suitable for exposure to ammonia, a highly hazardous chemical. Engineering controls exist for the ammonia refrigeration system to prevent the release of ammonia. In the event that engineering controls fail, respiratory equipment is available to protect employees from situations that may result in the Immediate Danger to Life or Health (IDLH). If the respirators provided are not acceptable to an employee, the employee will be given the opportunity to select another respirator that is acceptable and fits correctly.

Respirators used in the warehouse will be NIOSH-certified. Employees may be exposed to ammonia liquid or gas in the course of maintenance operations. The warehouse has an air sampling kit to measure the amount of ammonia in the atmosphere due to an ammonia leak. An air-purifying or full face respirator is used for exposure to ammonia between 50ppm and 300ppm. Canisters approved for ammonia and not exceeding maximum use concentrations established by regulatory standards will be used.

Full-face respirators are to be used only in situations where the concentration of ammonia is less than 300ppm or for emergency escape in potential IDLH situations. Canisters will be labeled and color-coded according to NIOSH recommendations. Canisters will be discarded when they reach their End-of-Service-Life Indicator (ESLI) date.

A NIOSH-approved Self-Contained Breathing Apparatus (SCBA) must be used when an employee is exposed to levels of ammonia above 300ppm. SCBA gear may be used during Emergency situations.

C. MEDICAL EVALUATIONS OF EMPLOYEES USING RESPIRATORS

Those employees who will wear respiratory equipment will:

- 1) Have the approval of a physician to determine that they are physically able to use respiratory equipment. The employee's medical status will be reviewed before being exposed and on an annual basis.
- 2) Persons performing or reviewing Pulmonary Function Tests (PFT's) will be CRTT, RRT, or NIOSH certified in performing such tests.
- 3) Initial/Annual – The employee will complete a medical questionnaire and a physician will conduct a PFT. A report verifying that the employee is physically able to use a respirator will be generated. See attached medical Questionnaire.
- 4) Follow-up examinations shall be performed as recommended by the physician.

D. RESPIRATOR FIT TEST PROCEDURES

Millard shall use the qualitative fit test, Irritant Smoke (Stannic Chloride) See Appendix A for fit testing procedures and fit test form to be completed on each qualified employees.

E. PROPER USE OF RESPIRATORS IN THE WAREHOUSE

Respirators may not be used in situations where a face-to-facepiece seal cannot be achieved. Employees will not be allowed to use a respirator if there is any hair growth between the skin and the facepiece sealing surface, such as stubble, beard growth, beard, mustache or sideburns. A seal check will be performed prior to each use by the employee.

Currently, respirators are used because of the potential exposure to ammonia in the warehouse. Respirators are used only in situations where an engineering control has failed. In the event the exposure changes the need for respiratory protection, an appropriate assessment of the work area conditions and degree of employee exposure will be made. Appropriate changes will be made to this policy. It is the responsibility of the General Manager and/or Engineer to contact the Manager of Loss Prevention with specifics to any deviations to this policy.

Respirators will be maintained and available for emergency use according to the maintenance schedule outlined in Section F.

In the event of an ammonia emergency, Millard employees participating in an Emergency Response may be required to use SCBA gear. In the event of an ammonia incident, Millard coordinates with local responding units, such as a HAZMAT Team or Fire Department. Personnel from such responding unit shall be considered the Incident Commander. The Incident Commander is responsible for controlling the incident, including assigning personnel to enter the hot zone, or area considered IDLH.

F. RESPIRATOR MAINTENANCE

Respirators will be cleaned and disinfected after each use and before being worn by another individual. Respirators will be stored in an appropriate container and be accessible to the work area. Storage containers will be appropriately marked. See Appendix B for cleaning requirements.

Full-face respirators, SCBA gear and related component will be inspected on a monthly basis. A written record of inspection shall be completed. Inspection Checklists for full-face respirators and SCBA gear. See Appendix C for annual inspection maintenance procedure requirements for Level A encapsulated suits.

Any respirator found in a defective state shall be removed from service and discarded or repaired. Repairs shall be made according to manufacturer's recommendations and specifications.

G. BREATHING AIR QUALITY

SCBA tanks will be filled with air meeting the requirements for Grade D breathing air described in ANSI recommendations. This requirement will be met by filling air tanks through an appropriate local vendor. Tanks will be emptied and refilled on at least an annual basis.

H. TRAINING

Employees shall receive training on the proper use of respirators on an annual basis and practices donning a respirator 4 times yearly (quarterly). Training will include the following areas:

- a. The hazards of ammonia, including information on the PEL and IDLH levels. The harmful effects of ammonia will be explained in an understandable manner.
- b. Full-face air-purifying respirators must be used in exposures between 50ppm and 300ppm. An exposure above 300ppm requires the use of SCBA gear.
- c. Using respirators in emergency situations and in situations where the respirator malfunctions.
- d. How to properly inspect all aspects of the respirator.
- e. Proper maintenance and storage procedures.
- f. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- g. Qualified workers must completed the annual respiratory protection test
- h. Qualified workers must sign and date the Annual Training Certification form

Emergency situations: If your air-purifier respirator malfunctions while in used **stay calm** and immediately evacuate the area.

I. EVALUATION OF THE PROGRAM

The Respiratory Protection Program is included in the Plant Safety Inspection process administered by plant personnel and the Corporate Safety Manager. Plant safety inspections are conducted on at least an annual basis. Plant safety inspections for the Respiratory Protection Program includes verifying medical surveillance, conducting fit tests to ensure proper selection of respiratory equipment, verifying respirator maintenance and conducting training for employees. Changes to the Program will be made as necessary.

J. Storage of Respirators

- a. All respirators shall be stored to protect them damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they shall be stored to prevent deformation of the facepiece and exhalation valve.
- b. Kept accessible to work area, but not in the damager zone such as in or near the motor room. Air purifying respirators are to be stored in the motor room for emergency purposes only and can be used when draining oil pots.
- c. SCBA respirators must be stored away from the motor room.
- d. SCBA spare tanks must be secured to prevent rolling and falling.
- e. The safety Locker that stow the respirator equipment, level "A" suits, air sampling kit, etc, must be kept locked and only authorized persons shall have access.

K. Recordkeeping

The following documents must be placed in the qualified employee's safety file:

- a. Initial/Annual Pulmonary Function Test results from the medical clinic
- b. Initial/Annual Medical Clinic Clearance to wear the provided respirators
- c. Initial/Annual Respirator fit test record
- d. Initial/Annual Training Certification form
- e. Initial/Annual training test

For complete OSHA requirements pertaining to Respiratory Protection see the OSHA's web site at www.osha.gov –click on standards – click on general industry – click on 1910.134 for all requirements of Respiratory Protection.

Respiratory Protection Program (RPP)

Annual Training Certification

I have been informed of the following information regarding Millard's Respiratory Protection Program (RPP).

Trainer: The Plant Engineer must conduct this training for all qualified persons in his facility.

The training will involve the review of the entire RPP. The Trainer must review the following section of the RPP:

- A. Purpose of the Policy
- B. Procedures for Selecting Respiratory Equipment
- C. Medical Evaluations of Employees Using Respirators
 - * Reviewing all the required forms
- D. Respirator Fit Test Procedures
 - * Appendix A
 - * Review Fix Test report
- E. Proper use of Respirators in the Warehouse
- F. Respirator Maintenance
 - * Review all Inspection Forms
 - * Demonstrate Proper Maintenance and Inspection
 - * See appendix B for cleaning instructions
- G. Breathing Air Quality
- H. Training must also include: The hazards of ammonia, including information on the PEL and IDLH levels. The harmful effects of ammonia will be explained in an understandable manner.
 - g. Full-face air-purifying respirators can only be used in exposures between 35ppm and 300ppm. Exposures above 300ppm requires the use of SCBA gear.
 - h. Using respirators in emergency situations and in situations where the respirator malfunctions.
 - i. How to properly inspect all aspects of the respirator.
 - j. Proper maintenance and storage procedures.
 - k. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- I. I have completed the Annual Medical Questionnaire and provided it to the medical clinic conducting the examination and I understand the questionnaire is to be confidential.

Employee Signature: _____ Date: _____

Respiratory Protection Program (RPP)

Initial Training Test

Instructions: This test is for qualified workers required to wear a SCBA or canister respiratory as part of their job duty. A copy of all completed test must be kept in the employee's safety file.

Reference Material: See Respiratory Protection Program (RPP) in the Corporate Safety Manual.

- | | |
|---|--------|
| 1) Millard provides two different respirators: a) air-purifying full-face respirator and
b) a self-contained breathing apparatus. | T or F |
| 2) In order for a person to be qualified to use respiratory equipment, such as an air-purifying full-face respirator or self-contained breathing apparatus that employees must be properly trained, physically able, and able to understand when to use such equipment. | T or F |
| 3) Air-purifying full-face respirator are to be used only in situations where the concentration of ammonia is less than 300ppm or for emergency escape in potential IDLH situations? | T or F |
| 4) Must an employee complete a medical questionnaire and provide it to the physician before having the physician conduct a pulmonary function Test? | T or F |
| 5) Is physician approval required to determine that a worker is physically able to use respiratory equipment before wearing a respirator? | T or F |
| 6) Employee's medical status will be reviewed by a physician on an annual basis? | T or F |
| 7) Is an annual fit test required to be performed on each qualified person for each style of respirator the qualified person will use? | T or F |
| 8) Millard's policy requires all respirators to be inspected monthly and the inspection documentation kept with each respirator? | T or F |
| 9) Is annual respirator training required for all qualified workers? | T or F |
| 10) Self-contained breathing apparatus (SCBA) must be used for atmospheres with ammonia concentration levels are over 300ppm? | T or F |

Employee: _____ Date: _____

MILLARD REFRIGERATED SERVICES

ANNUAL MEDICAL QUESTIONNAIRE AND REQUEST FOR MEDICAL CLEARANCE FOR RESPIRATOR USERS

To be completed by Employee and taken to the testing clinic:

Can you read (circle): ☐ Yes ☐ No

Have you been told how to contact clinic who will review this questionnaire: ☐ Yes ☐ No (If not, ask)

You are allowed to answer the questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

1. Today's Date: _____

2. Your Name: _____

3. Age: _____ 4. Sex ☐ M ☐ F 6. Height _____ ft _____ in 7. Weight _____ lbs.

8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____

9. The best time to phone you at this number: _____

10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one):
Yes/No

11. Check the type of respirator you will use (you can check more than one category):

a. ___ N, R, or P disposable respirator (filter-mask, non-cartridge type only).

b. ___ Other type (for example, half- or full-face piece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No

If "yes," what type(s):

Part A (please circle "yes" or "no").

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes/No

2. Have you ever had any of the following conditions?

a. Seizures (fits): Yes/No

b. Diabetes (sugar disease): Yes/No

c. Allergic reactions that interfere with your breathing: Yes/No

d. Claustrophobia (fear of closed-in places): Yes/No

e. Trouble smelling odors: Yes/No

3. Have you ever had any of the following pulmonary or lung problems?
- a. Asbestosis: Yes/No b. Asthma: Yes/No c. Chronic bronchitis: Yes/No
 - d. Emphysema: Yes/No e. Pneumonia: Yes/No f. Tuberculosis: Yes/No
 - g. Silicosis: Yes/No h. Pneumothorax (collapsed lung): Yes/No
 - i. Lung cancer: Yes/No j. Broken ribs: Yes/No k. Any chest injuries or surgeries: Yes/No
 - l. Any other lung problem that you've been told about: Yes/No
4. Do you currently have any of the following symptoms of pulmonary or lung illness?
- a. Shortness of breath: Yes/No
 - b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
 - c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
 - d. Have to stop for breath when walking at your own pace on level ground: Yes/No
 - e. Shortness of breath when washing or dressing yourself: Yes/No
 - f. Shortness of breath that interferes with your job: Yes/No
 - g. Coughing that produces phlegm (thick sputum): Yes/No
 - h. Coughing that wakes you early in the morning: Yes/No
 - i. Coughing that occurs mostly when you are lying down: Yes/No
 - j. Coughing up blood in the last month: Yes/No
 - k. Wheezing: Yes/No
 - l. Wheezing that interferes with your job: Yes/No
 - m. Chest pain when you breathe deeply: Yes/No
 - n. Any other symptoms that you think may be related to lung problems: Yes/No
5. Have you ever had any of the following cardiovascular or heart problems?
- a. Heart attack: Yes/No
 - b. Stroke: Yes/No
 - c. Angina: Yes/No
 - d. Heart failure: Yes/No
 - e. Swelling in your legs or feet (not caused by walking): Yes/No
 - f. Heart arrhythmia (heart beating irregularly): Yes/No
 - g. High blood pressure: Yes/No
 - h. Any other heart problem that you've been told about: Yes/No
6. Have you ever had any of the following cardiovascular or heart symptoms?
- a. Frequent pain or tightness in your chest: Yes/No
 - b. Pain or tightness in your chest during physical activity: Yes/No
 - c. Pain or tightness in your chest that interferes with your job: Yes/No
 - d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
 - e. Heartburn or indigestion that is not related to eating: Yes/No
 - f. Any other symptoms that you think may be related to heart or circulation problems: Yes/No
7. Do you currently take medication for any of the following problems?
- a. Breathing or lung problems: Yes/No
 - b. Heart trouble: Yes/No
 - c. Blood pressure: Yes/No
 - d. Seizures (fits): Yes/No
8. If you've ever used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)
- a. Eye irritation: Yes/No b. Skin allergies or rashes: Yes/No
 - c. Anxiety: Yes/No d. General weakness or fatigue: Yes/No
 - e. Any other problem that interferes with your use of a respirator: Yes/No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently): Yes/No
11. Do you currently have any of the following vision problems?
 - a. Wear contact lenses: Yes/No
 - b. Wear glasses: Yes/No
 - c. Color blind: Yes/No
 - d. Any other eye or vision problem: Yes/No
12. Have you ever had an injury to your ears, including a broken ear drum: Yes/No
13. Do you currently have any of the following hearing problems?
 - a. Difficulty hearing: Yes/No
 - b. Wear a hearing aid: Yes/No
 - c. Any other hearing or ear problem: Yes/No
14. Have you ever had a back injury: Yes/No
15. Do you currently have any of the following musculoskeletal problems?
 - a. Weakness in any of your arms, hands, legs, or feet: Yes/No
 - b. Back pain: Yes/No
 - c. Difficulty fully moving your arms and legs: Yes/No
 - d. Pain and stiffness when you lean forward or backward at the waist: Yes/No
 - e. Difficulty fully moving your head up or down: Yes/No
 - f. Difficulty fully moving your head side to side: Yes/No
 - g. Difficulty bending at your knees: Yes/No
 - h. Difficulty squatting to the ground: Yes/No
 - i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
 - j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B. Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

If “yes,” do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If “yes,” name the chemicals if you know them: _____, _____, _____, _____.

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

a. Asbestos: Yes/No	b. Silica (e.g., in sandblasting): Yes/No
c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No	
d. Beryllium: Yes/No	e. Aluminum: Yes/No
g. Iron: Yes/No	h. Tin: Yes/No
j. Any other hazardous exposures: Yes/No	i. Dusty environments: Yes/No

If “yes,” describe these exposures:

-
4. List any second jobs or side businesses you have:

5. List your previous occupations:

6. List your current and previous hobbies:

7. Have you been in the military services? Yes/No

If “yes,” were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If “yes,” name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters: Yes/No b. Canisters (for example, gas masks): Yes/No c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle “yes” or “no” for all answers that apply to you)?:

a. Escape only (no rescue): Yes/No	b. Emergency rescue only: Yes/No
c. Less than 5 hours per week: Yes/No	d. Less than 2 hours per day: Yes/No
e. 2 to 4 hours per day: Yes/No	f. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

a. Light: Yes/No

If “yes,” how long does this period last during the average shift: ____ hrs. ____ mins.

Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate: Yes/No

If “yes,” how long does this period last during the average shift: ____ hrs. ____ mins.

Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. Heavy: Yes/No

If “yes,” how long does this period last during the average shift: ____ hrs. ____ mins.

Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using the respirator: Yes/No

If “yes,” describe this protective clothing and/or equipment: _____

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases): _____

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of first toxic substance:

Estimated maximum exposure level per shift:

Duration of exposure per shift:

Name of second toxic substance:

Estimated maximum exposure level per shift:

Duration of exposure per shift:

Name of third toxic substance:

Estimated maximum exposure level per shift:

Duration of exposure per shift:

The name of any other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, and security):

MILLARD REFRIGERATED SERVICES RESPIRATOR USE CLEARANCE FORM

Name: _____ DOB: _____

Evaluation Content:

___ Questionnaire ___ Physical ___ PFT ___ CXR ___ Lab/Other

Millard Refrigerated Services maintenance personnel may be required to use air-purifying full face canister respirator and/or a self-contained breathing apparatus (SCBA) when working on the ammonia refrigeration system. While using these types of respirators, the work performed will be in the moderate to heavy level. Full face canister respirators may be used during routine maintenance operations. SCBA gear is used for emergency situations only. Use of either type of respirator should last less than half an hour for each use. Depending on the situation, maintenance personnel may use respirators in a cold (i.e., less than 0°F) environment, at heights above 25 feet, or, for SCBA gear, in an encapsulating suit.

___ Approved for respirator wear without limitation

___ Approved for respirator wear with limitation (See below)

___ Not approved for respirator wear

___ Further medical evaluation necessary _____

Limitations

___ Limit to those environments where the STEL or IDLH would not be exceeded should the employee need to remove his respirator during urgent exit

___ Sedentary work only while using respirator

___ No use of negative pressure respirator

___ No use of SCBA

___ Other: _____

Physician: _____ **Date:** _____

Appendix A

Fit Testing Procedures (Mandatory) (6/06)

Part I. OSHA-Accepted Fit Test Protocols (Initially & Annually)

A. Fit Testing Procedures – Millard shall conduct the fit testing using the following procedures.

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user. Must be test on all styles they will be using.
2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit.

A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. *This instruction may not constitute the subject's formal training on respirator use, because it is only a review.*

3. The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.
4. The test subject shall be instructed to hold each chosen facepiece up to the face and eliminate those that obviously do not give an acceptable fit.
5. The more acceptable facepieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item

If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
 - (a) Position of the mask on the nose
 - (b) Room for eye protection
 - (c) Room to talk
 - (d) Position of mask on face and cheeks

7. The following criteria shall be used to help determine the adequacy of the respirator fit:
 - (a) Chin properly placed;
 - (b) Adequate strap tension, not overly tightened;
 - (c) Fit across nose bridge;
 - (d) Respirator of proper size to span distance from nose to chin;
 - (e) Tendency of respirator to slip;
 - (f) Self-observation in mirror to evaluate fit and respirator position.
8. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described by the respirator manufacturer

Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another facepiece shall be selected and retested if the test subject fails the user seal check tests.
9. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.
10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing her or his duties.
11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.
12. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.
13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit.
14. Test Exercises.
 - (a) The test conductor must perform the following test exercises for all fit testing methods prescribed in this Appendix. The employee must perform the test exercises in the appropriate test environment in the following manner:

- (1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.
- (2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
- (3) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.
- (4) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).
- (5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

- (6) Grimace. The test subject shall grimace by smiling or frowning.
- (7) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes.
- (8) Normal breathing. Same as exercise (1).
 - (A) Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

B. Qualitative Fit Test (QLFT) Protocols

1. Irritant Smoke (Stannic Chloride) Protocol

This qualitative fit test uses a person's response to the irritating chemicals released in the "smoke" produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

(a) General Requirements and Precautions

- (1) The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).
- (2) Only stannic chloride smoke tubes shall be used for this protocol.
- (3) No form of test enclosure or hood for the test subject shall be used.
- (4) The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.
- (5) The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

(b) Sensitivity Screening Check

The person to be tested must demonstrate his or her ability to detect a weak concentration of the irritant smoke.

- (1) The test operator read and understand the instruction provided with the irritant smoke testing kit. Millard uses a simple test kit from NEXTTEQ – VeriFit.
- (2) The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.

- (3) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties and to determine if he/she can detect the irritating properties of the smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

(c) Irritant Smoke Fit Test Procedure

- (1) The person being fit tested shall don the respirator without assistance, and perform the required user seal check(s).
- (2) The test subject shall be instructed to keep his/her eyes closed.
- (3) The test operator shall direct the stream of irritant smoke from the smoke tube toward the face seal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the facepiece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.
- (4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.
- (5) The exercises identified in section 14 of this appendix shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.
- (6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.
- (7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.
- (8) If a response is produced during this second sensitivity check, then the fit test is passed.

**Millard Employee Respiratory Protection Program
Respirator Fit Test**

Employee Name: _____ Date: _____

Job Title: _____ Department: _____

Test Conducted by: _____

Respirator Tested	Model	Size	Type
Manufacturer			
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____

Irritant Smoke (Stannic Chloride)

Pre-test sensitivity screening: Able to detect irritant smoke ☐ Yes ☐ No

Fit test screening: Did the worker able to detect smoke ☐ Yes ☐ No

Post-test sensitivity screening: Able to detect irritant smoke ☐ Yes ☐ No

Qualitative Test Results

Test Results ☐ Passed ☐ Failed Comments: _____

The following training was presented to the employee.

- * Guidelines for proper usage of a respirator
- * Respirator inspection requirements
- * Employee demonstrated proper use of respirators tested on

Employee's Signature _____ Date _____

Place this document in the employee's safety training file.

Appendix B

1910.134: Respirator Cleaning Procedures (Mandatory) (6/06)

These procedures are provided to assist workers when cleaning respirators. They are general in nature or you may use the cleaning recommendations provided by the manufacturer of the respirators. You must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

I. Procedures for Cleaning Respirators

- A. Remove filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure- demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- B. Wash components in warm (43 deg. C [110 deg. F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- C. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.
- D. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 - 1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or,
 - 2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. F); or,
 - 3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- E. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- F. Components should be hand-dried with a clean lint-free cloth or air-dried.
- G. Reassemble face piece, replacing filters, cartridges, and canisters where necessary.
- H. Test the respirator to ensure that all components work properly.

APPENDIX C

Level “A” Encapsulating Suits General Instructions

Operating:

- Read and understand the Instruction Manual for your Level “A” suit.
- Be sure the suit is approved for Ammonia (NH₃).
- Should be properly cared for and stored in a cool dry area.
- Do not immerse in Ammonia – it protects against splashes & vapors.
- Maintain positive pressure in suit. (Valves)
- Should be worn by persons in good physical condition.
- Not designed against extreme cold, and may cause static in cold.
- Designed to be worn over regular work clothes.

Inspections (document inspection on suit tag)

- Upon receipt from manufacturer.
- Before each use, after each use and/or annually. (Check your instruction manual)
- Lay the suit on a clean, smooth surface.
- Examine seam tape for de-lamination
- Examine view window for seal.
- Examine suit gloves.
- Examine zipper and zipper cover.
- Examine suit exhalation valves.
- Examine all suit snaps and closures.
- Note: small holes can be repaired but if suit develops large holes or if the zipper malfunctions - the suit must be replaced and the failed suit sent to Ray Pastorius @ Corporate so the suit can be used for training purposes.

Air Pressure Tests:

- When received from supplier, annually and/or after use (Check your instruction manual)
- Lay the suit on clean smooth surface.
- Close all inside valves.
- Attach suit to manometer or magnehelic air pressure gauge.
- Inflate the suit to a given pressure of water column.
(Each manufacturer will have its distinct pressure amount.)
- Reduce the pressure as suggested. Wait a given amount of time.
- Read the air pressure.
- If the suit pressure has not dropped more than the manufacture’s instructions the suit has passed the pressure test.

If the suit fails:

- Re-inflate the suit to the initial required pressure.
- Use soapy water solution. Leaks will appear as bubbles on the outside of the suit.
- Air leaks are often found around face shield, at the zipper closure, and around gloves.
- Often leaks can be corrected by fully engaging the zipper or tightening the clamps on the glove ring.
- If leaks are the results of excessive damage to the basic fabric or face shield, the suit must be replaced.
- The failed suit must be sent to Ray Pastorius @ Corporate so the suit can be used for training purposes.

Donning (Putting On):

- Make sure suit is free from defects.
- Use “Buddy” system for donning and use.
- Take off shoes, but keep on work clothes.
- Put on SCBA don’t put on the face mask at this time.
- While seated, place both legs in suit.
- Place boots over the suit feet. Stand up.
- Tighten the inside belt in order to hold the suit up in the middle.
- Turn on air supply and check out SCBA and put on the face mask.
(It is very important that SCBA air supply is working and the tank full.)
- Place arms and head inside the suit.
- Close zipper and zipper cover.
- Have assistant check to see that everything is O.K.

Doffing (Removing)

- Leave the work area with enough air supply remaining to safely remove suit.
- If suit has been exposed to Ammonia, rinse before removing. (Decontamination)
- Remove suit in reverse order of donning.

Warning

- Adequate breathing air must be provided.
- Not designed to use for fire fighting.
- Use “Buddy” system to don or doff the suit.
- Do not use damaged suit.

Shelf Life: Chemical suits contain components made from various polymer or rubber materials for which there is no specific shelf life data available. MRS will remove any suit from service if it does not pass the visual and/or pressure tests.

Inspections - Initial and date _____

Appendix D

Responding to an Ammonia (NH₃) Release (8/06)

Millard Refrigerated Services **does not** have an Emergency Response Team at any facility. Millard's purpose for having 24 hour HAZWOPER trained personnel on site is only for assisting the local authority having jurisdiction in mitigating an uncontrolled release that has the potential of a safety and health hazard. There are benefits for having key Millard employees working in combination with local jurisdiction for controlling a release.

At any point where the concentration level rise above 300 ppm (except at the immediate leak location) and/or when any questionable conditions or situations develop you must terminate the assessment and vacate to the safe zone. At this point all involved personnel and the Emergency Response Coordinator must discuss the current conditions and implement the appropriate response. In some cases standard mitigation procedures will reduce the concentration levels below 300 ppm and other case you will need to call for location assistance such as the fire department and/or HazMat team.

Responses to incidental releases of ammonia where the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel are not considered to be emergency responses within the scope of OSHA standard 1910.120. Responses to releases of ammonia where there is no potential safety or health hazard (i.e., fire, explosion, or chemical exposure) are not considered to be emergency responses.

Immediately Dangerous to Life and Health (IDLH) as defined by OSHA: means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from the dangerous atmosphere. OSHA' IDLH for ammonia is 300 ppm.

Air-purifying Respirators are required to be worn at 50 ppm to 300 ppm and the SCBA is required to be worn @ 300 ppm and above. Air-purifying respirators can be used for emergency escape even though the atmosphere concentration is above 300 ppm.

IIAR Bulletin #110 states 100 ppm will cause moderate irritation and discomfort of the mucous membrane and the eyes, but with no lasting consequences. Exposure to concentrations above 1500 ppm will damage or destroy body tissue while exposure to 2500 ppm and above increases the risk of fatality. Liquid ammonia splashes on the skin can cause both chemical and frost burns.

Every ammonia release situation is different and must be treated on a per release basis. There is no routine response. You must rely on your experience, standard safe practices and your sound judgment to effectively evaluate each ammonia release situation. Millard's number one concern is your safety. Always take the necessary precautions to protect yourself and co-workers.

A. Preparing for the initial assessment investigation of the potential ammonia release the authorized and trained persons shall:

- 1) Obtain as much information about the location, strength of the ammonia smell, and if the area has been evacuated, check the ammonia sensor alarm panel to confirm location and intensity, etc.
- 2) Take an air-purifying respirator for each person.
- 3) Take the air sampling kit with pull tubes.
- 4) Take two-way communications and coordinate communication with the on duty Emergency Response Coordinator (ERC).
- 5) Take tools, supplies, etc commonly used to control an incidental release.

B) Initial assessment:

- 1) Reconfirm that the area has been evacuated of all personnel. If in the motor room confirm that the ventilation system is activated.
- 2) Carefully travel to the area in question and **stop** when you smell ammonia.
- 3) Try to determine the source from afar, implement step #4 and take appropriate engineering procedures to isolate and mitigate the release from a remote area (such as a control bank, etc).
- 4) Set a perimeter barrier to identify a safe zone and to isolate the involved area from unauthorized entry and take control measures to stop the spread of ammonia by closing doors, etc.
- 5) Once the equipment is remotely isolate then start other mitigation procedures such as ventilation and neutralization. While wearing the air-purifying respirator continue with the assessment of take regular air samples.
- 6) At any time when the ammonia is over 300 ppm **you must vacate** to a safe zone and continue mitigating the ammonia by ventilation or Neutralizing with CO₂ until the ammonia concentration falls below 300 ppm.

C) Initial assessment determines it is a major ammonia release:

You must notify your local hazmat team and/or fire department. By working with the highly trained outside response units helps insure your safety and the safety of your workforce. Working with the local hazmat team and fire department is the safest way to handle a major situation.

Once the local authorities are on site they assume control of the incident and it is your responsibility to work in conjunction these units for the most beneficial response results.

Make sure proper notification to the National Response Center 800-424-8802 and your State Response Commission is made within 2 hours.

D) Assessment of a release on the roof:

- 1) A roof response in itself creates a unique response situation because of;
 - a) Limited roof access
 - b) Limited escape routes
 - c) Roof configuration may create special challenges
 - d) Special challenges with the leak location involving piping and equipment configuration
 - e) Weather may create special challenges
 - f) Perhaps instead of evacuating the building the employees maybe safer to shelter inside the building away for the leak zone
 - g) The community maybe affected.

Just to name a few possible additional obstacles that you maybe confronted with.

E) Mitigation procedures for an ammonia release

- 1) Ventilation:** Positive pressure ventilation is the quickest and most effective method of mitigating the results of an ammonia release. Essentially, the contaminated air is displaced with fresh air being forced into the room with ventilation fans. Ventilation should be set up as soon as possible. Room temperatures must be monitored to prevent bringing the temperature up too much, which may create problems with the product integrity. An added feature of positive pressure ventilation is that the fresh air usually contains a certain amount of moisture, which helps absorb the ammonia.
- 2) Neutralization:** Ammonia can be neutralized through the use of CO₂. Simply open bottles of CO₂ into an affected room to neutralize the ammonia. The amount of CO₂ to use depends on the amount of ammonia that has leaked. It is a good idea to identify a supplier of CO₂ to be able to contact in the event of an incident. Make sure these pressurized cylinders are secured to prevent knock over

(See safety bulletin # 20 for the precautions when using Carbon Dioxide)

(See safety bulletin # 21 for getting rid of ammonia smell in corrugated boxes)