**The Pennsylvania State University**

**Respiratory Protection Program and Procedures**

July 17, 2002

Updated 2015

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**Purpose**

Penn State employees may in certain circumstances be exposed to respiratory hazards during their work. These hazards may include airborne particulates, vapors and gases. The purpose of this Penn State Respiratory Protection Program is to ensure that all University employees are protected from exposure to these respiratory hazards.

When necessary to control exposures to air contaminants, engineering controls such as ventilation, and other means of control such as good housekeeping, work procedures, and substitution of less toxic materials, are the first lines of protection. Where these preferred controls are not feasible or cannot completely control the hazards, then personal protective equipment, including respirators are required. Respirators are also needed to protect employees' health during emergencies. Examples of work areas or tasks requiring respirator use at Penn Statue are outlined in the Respirator User/Hazard Matrix in Appendix B.

In addition, some employees may desire to wear respirators during certain tasks that do not require respiratory protection. Where approved by their supervisor and safety officer, respirators may be provided for use to employees. This use is referred to as “voluntary use”, and is intended to provide employees with nuisance level protection. Typically, Penn State can support the use of filtering facepiece (style) respirators, or dust masks for voluntary use. In certain special circumstances, other types of respirators may be approved for voluntary use; however, these necessitate that the employee be enrolled in all other facets of the Penn State respiratory protection program. These requirements are further outlined in the Scope and Application section below.

**Scope and Application**

This program applies to all employees who are required to use, and voluntarily use respirators during normal work operations, and during certain non-routine or emergency operations such as a spill or leak of a hazardous substance.

 **Required Respirator Use – All Tight-Fitting Facepiece, Filtering Facepiece (Dust Mask) and Loose- Fitting Facepiece Respirators**

Any employee who is required to wear a tight-fitting respirator, including: filtering facepiece types and/or tight-fitting air-purifying respirators (APR’s), powered air-purifying respirators (PAPRs), air-supplying respirators (ASR’s), and self-contained breathing apparatus (SCBA’s) are subject to the medical evaluation, respirator fit-testing, training, and cleaning, maintenance and storage requirements of this program, and must be provided with information specified in the program.

 **Voluntary Respirator Use – Filtering Facepiece (Dust Mask) Respirator**

Any employee who is approved for voluntary use of a filtering facepiece for comfort or nuisance level protection, is NOT subject to the medical evaluation and fit-testing requirements of this program; however, they are required to receive a review of the contents of Appendix D of OSHA’s respiratory protection standard found at Title 29 Part 1910.134 of the Code of Federal Regulations. This should include clarification of limitations, proper use, maintenance and clean storage of dust masks.

 **Voluntary Respirator Use – Any other Tight-Fitting Facepiece**

Employees who are approved for voluntary respirator use of any other type of tight-fitting respiratory protection are subject to the medical evaluation provisions, fit testing and other required elements of this respiratory protection program.

**Voluntary Respirator Use – Loose-Fitting Facepiece Respirator types (including PAPR’s)**

Employees who are approved for voluntary respirator use of any loose-fitting types of respirators, such as PAPR helmet or hood style respirators, are NOT required to receive medical evaluation, and respirator fit-testing, but are required to receive training in the limitations, proper use, cleaning/ maintenance and storage of respirators.

Employees participating in the Penn State Respiratory Protection Program do so at no cost to them. The expense associated with training, medical evaluations, fit testing, equipment and other aspects is carried by Penn State.

**Responsibilities**

**Location Program Administrator (LPA)**

* Responsible for coordination and implementation of the Respiratory Protection Program at the work unit level. This person is typically the work unit or college safety officer, but may be an assignee.
* Assign or serve as a Local Program Administrator
* Arranges, supports, conducts or assists with work unit personnel training
* Monitor respirator program and respirator use to ensure that respirators are used in accordance with Penn State requirements
* Verify proper storage and maintenance of respiratory protection equipment
* Coordinate personnel involvement in respirator medical surveillance and fit-testing
* Maintain records required by the program
* Ensure that new employees receive appropriate training, fit testing and medical evaluation
* Verify the availability of appropriate respirators and accessories
* Assist the PM with periodic respirator program review

**Program Manager/ Environmental Health and Safety (PM)**

* Oversight of the program per PSU Safety Policy SY-1.
* Evaluate and identify work areas, processes or tasks, in coordination with the college and/or work unit safety officer, or campus safety liaison that require respirators and evaluating hazards.
* Select respiratory protection options
* Conduct or arrange fit testing
* Periodically review, evaluate and update/ revise the respiratory protection program and manual, as required

**Supervisor**

Supervisors are responsible for ensuring that the Respiratory Protection Program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure the program is understood and followed by the employees under their charge. The duties of the supervisors include:

* Ensure that employees (including new hires) have received appropriate training, fit testing and medical evaluation
* Provide for and ensure the availability of appropriate respirators and accessories
* Be aware of tasks requiring the use of respiratory protection
* Enforce the proper use of respiratory protection, when necessary
* Ensure that respirators are properly cleaned, maintained and stored according to the manufacturers’ recommendations and/or the Respiratory Protection Program
* Ensure that respirators fit well and do not cause discomfort
* Continually check work areas and operations to identify possible respiratory hazards
* Work with the Local Program Administrator\Safety Officer to identify and address respiratory hazards, and to assist the Safety Officer and Environmental Health and Safety (EHS) with evaluating environments and apprising these parties of process changes, that may impact worker safety and needs for respiratory protection.

**Employee**

Each employee is responsible to wear the respirator in the manner in which they were trained. Employees must also:

* Maintain their respirators as instructed, and store them in a clean sanitary location
* Inform their supervisor if the respirator no longer fits well, and request a replacement
* Inform their supervisor or the Local Program Administrator of any respiratory hazards that they believe are not adequately addressed in the workplace and any other concerns that they have regarding the program.

**Program Elements**

**Respirator Selection Procedures**

EHS, in coordination with the LPA will select appropriate respirators in accordance with all applicable regulatory standards and conduct Hazard Evaluations, as needed (i.e. for each task, process or work area where it is determined airborne contaminants may be present). EHS shall pre-approve respirator purchases and uses.

**Hazard Evaluations**

Hazard Evaluations may include:

* Identification and development of lists of hazardous substances used in the workplace, unit or task, as needed.
* Review of work processes to determine where potential exposures to hazardous substances may occur. This review may include surveying the workplace, reviewing process records and talking with employees and supervisors, whichever is applicable.
* Exposure monitoring to quantify potential hazardous exposures, as needed. Monitoring will either be conducted by EHS or outside services.

**Task Evaluation**

* If an employee or supervisor believes that respiratory protection is needed during a particular task, he/she is to contact his or her supervisor or the Safety Officer who will contact EHS to evaluate the potential hazard, arranging for outside assistance as necessary.
* EHS will communicate the results of that assessment to the Safety Officer who will inform all affected employees.

* If respiratory protection is necessary, all other elements of this program will be in effect for those tasks, and the program and procedures will be updated accordingly.
* EHS will update Hazard Evaluations as needed (i.e., any time work process changes potentially affect exposure).

**NIOSH Certification of Respirators**

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall only be used in accordance with the terms of that certification. Also, all filters, cartridges and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use.

**Medical Evaluation**

Employees who are required to wear tight-fitting respirators must first pass a medical evaluation. Employees are not permitted to obtain or wear respirators until a physician, or other approved medical professional, has determined that they are medically able to do so. Typically, these will be coordinated through Penn State Occupational Medicine, or the Campus designated medical panel physician/ designated services.

Medical evaluation procedures are as follows:

* The medical evaluation will be conducted using the questionnaire provided by Penn State Occupational Medicine.
* All affected employees will complete the medical questionnaire and will be permitted to fill out the questionnaire during normal working hours.
* Follow-up medical exams will be granted to employees as required by the OSHA standard, and/or as deemed necessary by the medical professional and EHS.
* All employees will be granted the opportunity to speak with the medical professional about their medical evaluation, if they so request.
* The Local Program Administrator shall provide a copy of this program manual to the medical professional.
* The medical professional will be provided with a list of hazardous substances that employees may be exposed to, work area, job title, proposed respirator type and weight, length of time required to wear the respirator, expected physical workload (light, moderate or heavy), potential temperature and humidity extremes and any additional protective clothing required. For assistance in this process, a Respirator Use Evaluation Form is provided in Appendix G. EHS is also available for assistance as needed.
* Additional medical evaluations may be provided as needed.

Employees who require corrective lenses will submit a copy of their prescription for procurement of adapter kits suited for the respirator.

**Fit Testing**

Fit testing is required for employees wearing tight-fitting Air Purifying Respirators (APRs), Powered Air Purifying Respirators (PAPRs) and Supplied Air Respirators (SARs), including Self-Contained Breathing Apparatus (SCBA’s).

Fit testing shall be conducted by Occupational Medicine, EHS or designated employees or assignees approved by EHS.

 **Fit Testing Frequency**

 Employees shall be fit tested:

* Prior to required use of any respirator with a tight-fitting facepiece.
* Periodically, i.e. Annually.
* When there are changes in the employee's physical condition that could affect respirator fit (e.g., obvious change in body weight, facial scarring, etc.).

Employees will be fit tested with the make, model and size of respirator they will wear on the job. Fit testing of PAPRs with tight-fitting facepieces shall be conducted in the negative pressure mode.

Fit testing shall be conducted following OSHA approved methods (See Appendix C).

**Respirator Use**

Employees will only use their respirators under conditions specified by this program, and in accordance with the training they receive. A respirator **shall not** be used in a manner which is not certified by NIOSH or its manufacturer.

All employees shall conduct user seal checks each time that they wear their respirator (e.g. facepiece, hose, filter gaskets, valves, etc.). Employees shall use either the positive or negative pressure seal check, depending on which works best for them, but both tests are recommended. Appendix D contains the OSHA Positive/Negative Pressure Respirator Fit Check Procedure. Additionally, those using PAPRs shall check motor, battery charge and condition before and after each use.

Employees shall be permitted to leave the work area to maintain their respirator for the following reasons:

* To clean their respirator.
* If the respirator is impeding their ability to work.
* To change filters or cartridges or replace malfunctioning or broken parts.
* To inspect respirator if it stops functioning as intended.

Employees are not permitted to wear tight-fitting respirators if they have any condition or facial hair that interferes with the facepiece seal. Employees are also not permitted to wear headphones, jewelry or other articles that may interfere with the facepiece seal.

**Voluntary Respirator Use**

Voluntary use of tight fitting respirators or PAPRs is not allowed.

**Emergency Procedures**

Appendix E is reserved for areas or processes that have been identified as having foreseeable emergencies. Specific procedures for each area or process are described in the appendix as needed.

**Respirator Malfunction**

Air Purifying Respirator Malfunction:

For any malfunction of an APR (e.g., chemical vapor/odor breakthrough, facepiece leakage or an improperly working valve), the respirator wearer shall go to a safe area to maintain the respirator. The worker shall then inform his or her supervisor that the respirator no longer functions as intended. The supervisor must ensure that the employee receives the needed parts to repair the respirator, or is provided with a new respirator.

Supplied Air Respirator Malfunction:

All workers wearing SARs will work in pairs. Coworkers shall assist workers who experience an SAR malfunction as follows:

If a worker experiences a malfunction of an SAR, he or she should signal to the coworker that he or she has had a respirator malfunction. The coworker (wearing an SAR) shall aid the worker in immediately exiting the area.

**IDLH Procedures**

If Immediately Dangerous to Life or Health (IDLH) contaminant levels are known or suspected at any time, the area shall be vacated and EHS shall be notified immediately.

Appendix F is reserved for areas known to have the potential for IDLH conditions.

**Air Quality for Supplied Air Respirators**

Only Grade D breathing air shall be used in SAR air supply cylinders. PSU will coordinate deliveries of breathing air cylinders with the University’s vendor(s) and require them to certify that the air in the cylinders meets the specifications of Grade D breathing air.

PSU will maintain a minimum air supply of one fully charged replacement cylinder for each SAR unit. **?**

**Cleaning, Maintenance, Filter Cartridge Change Schedules and Storage**

Respirators are to be cleaned and disinfected after each use.

 **Respirator Cleaning and Disinfecting Procedures**

The following procedure is to be used when cleaning and disinfecting respirators:

* Disassemble the respirator, removing any filters, canisters or cartridges.
* Wash the facepiece and associated parts (except the cartridges, which should never be allowed to get wet) in a mild detergent with warm water. Do not clean or wash with organic solvents, etc.
* Rinse completely in clean warm water.
* Wipe the respirator lightly with disinfectant wipes (70% Isopropyl Alcohol) to kill germs, as needed.
* Thoroughly air dry in a clean area.
* Reassemble the respirator and replace any defective parts.
* Place in a clean, dry plastic bag or other airtight container.

PSU will ensure there is an adequate supply of appropriate cleaning and disinfection materials. If supplies are low, employees should contact their supervisor who will restock materials as needed.

**Respirator Maintenance**

Respirators are to be properly maintained for proper function and adequate protection at all times. Maintenance involves thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer.

**Respirator Inspection**

Respirators are to be inspected before and after each use. The following checklist will be used when inspecting respirators:

* Facepiece: check for cracks, tears, holes, facemask distortion, cracked or loose lenses/faceshield, etc.
* Headstraps: breaks, tears or bent or broken buckles.
* Valves: residue or dirt, cracks or tears, valves stuck or folded open.
* Filters/Cartridges: NIOSH approval designation/label clearly visible, gaskets, cracks or dents in housing, proper cartridge for hazard.
* PAPRs: hose condition, gaskets, motor function, battery charge and condition.
* Air Supply Systems: breathing air quality/grade, condition of supply hoses, hose connections, settings on regulators and valves.

Employees are permitted to leave their work area to perform limited maintenance on their respirator. This should be in a designated area or an area that is free of respiratory hazards. Situations when this is permitted include: to wash their face and/or facepiece to prevent eye or skin irritation, to replace the filter cartridge or canister if vapor odors or chemical breakthrough or leakage is detected, or if any other damage to the respirator or its components is detected.

**Filter Cartridge Change Schedules**

Particulate Filter Cartridges:

Employees wearing respirators with High Efficiency Particulate Air (HEPA) filters shall change the cartridges when they first begin to experience increased breathing resistance while wearing their masks, or at least annually.

Organic Vapor/Chemical Cartridges:

Employees wearing respirators with organic vapor cartridges shall change the cartridges as soon as chemical odors can be detected while wearing the respirator, or at least annually.

**Respirator Storage**

Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each employee will clean and inspect his/her respirator in accordance with the provisions of this program and will store his/her respirator in a clean plastic bag.

**Defective Respirators**

Defective respirators or parts shall be taken out of service immediately. If, during an inspection, an employee discovers a defect, he/she is to notify their supervisor immediately. Supervisors will decide whether to:

* Temporarily take the respirator out of service until it can be repaired.
* Perform a simple fix on the spot such as replacing a headstrap.
* Dispose of the respirator due to an irreparable problem or defect.

When a respirator is taken out of service for an extended period of time, the respirator will be tagged out of service, and the employee will be given a replacement of the same make, model, and size.

SARs shall only be repaired by the manufacturer or an approved vendor.

**Training**

EHS will provide initial training to respirator users and their supervisors prior to respirator use.

Training will cover the following topics:

* Penn State Respiratory Protection Program.
* OSHA Respiratory Protection standard.
* Respiratory hazards encountered and their health effects.
* Proper selection and use of respirators.
* Limitations of respirators.
* Respirator donning and user seal (fit) checks.
* Fit testing.
* Emergency use procedures, as applicable.
* Maintenance and storage.
* Medical signs and symptoms limiting the safe and effective use of respirators.

Employees will be retrained annually during Fit Testing or as needed (e.g., if they change jobs and need to use a different respirator). Employees using SCBAs shall receive training twice a year. Respirator training will be documented by the Program Administrator and will include the type, model and size of respirator for which each employee has been trained and fit tested.

**Program Evaluation**

The Program Administrator and Coordinator are responsible for ongoing review of the program with periodic evaluations/audits of the program conducted by EHS. The evaluations/audits may include consultations with employees using respirators and their supervisors, site inspections, air monitoring and review of records.

Problems identified will be noted and addressed by the Program Administrator. These findings will be reported to management and EHS with recommendations to correct deficiencies and target dates for the implementation of those corrections.

To assist in this process, various Evaluation/Audit Checklists can be found in Appendix H.

**Documentation and Recordkeeping**

This program is posted on the EH&S webpages and is available to all employees who want to review it.

Training and fit test records are maintained in EHS and the Program Administrator’s office. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

The approved medical professional and the Administrative Unit will maintain copies of appropriate records. Completed medical questionnaires and the medical professional’s findings are confidential and will remain at the medical professional’s office.

**REFERENCES**

*Questions and Answers on the Respiratory Protection Standard* OSHA Publication Available from: OSHA, See the list of area and regional offices in Appendix II; Web site: www.OSHA.gov.

*OSHA Instruction: Inspection Procedures for the Respiratory Protection Standard OSHA.* Publication. Available from OSHA web site: www.OSHA.gov.

*Respirator Selection Guide* OSHA Publication Available from: OSHA, See the list of area and regional offices in Appendix II; Web site: www.OSHA.gov.

*Documentation of the Threshold Limit Values* Available from: ACGIH Publications Office, 6500 Glenway Ave„ Building D-5, Cincinnati, OH 45221

*NIOSH/OSHA Pocket Guide to Chemical Hazards* Available from: National Institute for Occupational Safety and Health Phone Number: (800-356-4674); Web site: www.cdc.gov/nioshThomepage.html

ANSI Respirator Standard 1992 Z88.2

*Condensed Chemical Dictionary* Gessner G. Hawley, Van Nostrand Reinhold Co., 135 W. 50th St., New York, NY 10020

*Industrial Respiratory Protection* NIOSH Publication Available from: National Institute for Occupational Safety and Health Phone Number: (800-356-4674); Web site: www.cdc.gov/niosh/homepage.html

*Respirator Decision Logic* NIOSH Publication Available from: National Institute for Occupational Safety and Health Phone Number: (800-356-4674); Web site: www.cdc.gov/niosh/homepage.html

*NIOSH Guide to the Selection and Use of Pa**rticulate Respirators Certified Under 42* *CFR 84* Available from: National Institute for Occupational Safety and Health Phone Number: (800-356-4674); Web site: www.cdc.gov/niosh/homepage.html

Respirator Program Manual created: 7/17/02

Revised: 5/17/07

**Appendix A**

**OSHA Respirator Standard (Latest Version)**

[**http://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=STANDARDS&p\_id=12716**](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=12716)

**Appendix B**

**Unit Respirator User/Hazard Matrix**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Task Description | Job Title | Respirator Authorized | Required | Evaluation | Hazard |
| Ammonia Leak at Food Science Building | Refrigeration Technicians, Emergency Responders | SCBA | Yes | Required Use For Emergency Response | Ammonia |
| Asbestos Handling | Maintenance Wkr. Asbestos Removal,Maintenance Wkr Labor/Equipment, Maintenance Wkr Insulating | APR, PAPR | Yes | Required Use When Working With Asbestos | Asbestos |
| Baghouse Maintenance Operations | Maintenance Wkr Labor/ Equipment | APR,PAPR | Yes | Required Use | Arsenic From Particulates |
| Bioaerosol Particulate Cleanup | Various Job Titles | APR,PAPR | Yes | Required Use For Appropriate Maintenance Operations | Bioaerosols |
| Boiler Cleaning | Maintenance Mech oil and Gas | APR | Yes | Required until further evaluation | Particulates |
| Comfort issue | Unrestricted | Dust Mask | No | None needed | Particulates |
| Commingling of material for waste removal and spill response. |   | MSA advantage 3000 ~~1000~~,SCBA | Yes | Required Use |   |
| Commingling of material for waste removal and spill response. |   | MSA advantage 3000 ~~1000~~,SCBA | Yes | Required Use |   |
| Dust conditions | Various Titles | APR, PAPR | Yes | Required when dust may exceed designated standards | Particulates |
| Grinding plates | Maintenance Wkr. Asbestos Removal,Maintenance Wkr Labor/Equipment | APR, PAPR | Yes | Required Use For Specific Operations | Particulates |
| HVAC Coil Cleaning | Environmental Systems Tech., Refrigeration Tech., PM Wkr.Mechanical and Plumbing | APR, PAPR | Yes | Required For Specific Operations | Particulates |
| Painting (spray application) | Painter A, Autobody Repairer | APR, PAPR | Yes | Required When Appropriate | Inhalation of volitiles and particulates |
| Pesticide Spray Team | Groundskeeper Landscape A, Maintenance Wkr. Area Landscape, Tree Surgeon | APR, PAPR | Yes | Required for Use during Spray Application | Pesticides |
| Removal of,/ Maintenance of chemical Fume Hoods | Various Job Titles | APR, PAPR | Yes | Required for specific Activities | Exposure/ inhalation of unknown particulates |
| Spill Response | Emergency Responders | APR, SCBA | Yes | Required for Use  | Hazardous material exposure conditions |
| Water treatment operations | Water Analyst A | APR  | Yes | Required for use with chlorine and water treatment chemicals | Water Treatment Chemicals |

**Appendix C**

**OSHA Respirator Fit Testing SOP**

[**http://www.osha.gov/pls/oshaweb/owadisp.show\_document?p\_table=STANDARDS&p\_id=9780**](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9780)

**Appendix D**

**EHS Respirator Fit Testing Form (Blank)**

**PENN STATE UNIVERSITY**

 **ENVIRONMENTAL HEALTH AND SAFETY**

 **RESPIRATOR FIT-TEST RECORD**

Last Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ First Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Birth Date\_\_\_\_\_\_\_\_\_

Date of Fit Test \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Department \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Job Description \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Type of Mask:(Full-Face)(Half-Face)(PAPR)(N-95) Type of Mask:(Full-Face)(Half-Face)(PAPR)(N-95)

Manufacturer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Manufacturer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Model: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Model: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Size: (S) (M) (L) Size: (S) (M) (L)

**Fit Test Checks:**

Negative Pressure/Positive Pressure instructions given and test demonstrated to subject (Yes) (No).

Quantitative Fit Test Agent \_\_\_\_\_ Pass \_\_\_\_\_ Fail

Bitrix \_\_\_\_\_ Pass \_\_\_\_\_ Fail

Saccharin \_\_\_\_\_ Pass \_\_\_\_\_ Fail

Irritant Smoke \_\_\_\_\_ Pass \_\_\_\_\_ Fail

**Conditions Which Could Affect Respirator Fit:**

\_\_\_\_\_\_\_ Clean Shaven \_\_\_\_\_\_\_ Facial Scar \_\_\_\_\_\_ Weight Gain/Loss

\_\_\_\_\_\_\_ 1-2 Day Growth \_\_\_\_\_\_\_ Dentures

\_\_\_\_\_\_\_ Moustache \_\_\_\_\_\_\_ Glasses

**RECOMMENDATIONS: STORE RESPIRATOR IN CLEAN, COOL, DRY AREA (AWAY FROM SUNLIGHT). CHECK ALL VALVES, GASKETS, MASK, ETC. FOR CRACKING, DAMAGE, MALFORMATION, ETC. PRIOR TO EACH USE. PERFORM POSITIVE AND NEGATIVE PRESSURE FIT CHECKS BEFORE EACH USE. ENSURE PROPER CARTRIDGE OR MASK IS USED FOR THE CHEMICAL OR AGENT INVOLVED.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I hereby certify that the above named individual has been qualitatively fit tested and that the above information reflects the results of the test.

**Test Administrator:** Print: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Test Subject:** Print: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cc: Employee

Environmental Health and Safety (if testing conducted internally by department)

Revised: November 2003 (PSU EHS)

**Appendix E**

**Emergency Procedures**:

The following areas or processes have been identified as having possible emergency situations:

**Food Sciences Building – ammonia spills or leaks.**

Respiratory protection in these instances is for EHS emergency response and specifically trained Refrigeration Technicians following standard operating procedures.

**EHS Chemical Waste Storage Area - chemical leaks or spills**

Respiratory protection in these instances is for EHS emergency response purposes only. general employees are not trained as emergency responders, and are not authorized to act in such a manner.

**Chlorine Leaks in Various Chlorine Areas**

Respiratory protection in these instances is for EHS emergency response and specifically trained Waste Water Treatment plant and Distribution employees following standard operating procedures.

**Appendix F**

**Respirator Use Evaluation Form**

**OPP Respirator Use Evaluation Form**

Respirator User Last Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ First Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Social Security Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date of Evaluation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Job Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Supervisor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Type of Respirator Currently in Use (Circle One): (Half-Face) (Full-Face) (SCBA) (None)

Respirator Weight: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Contaminant Classification (check all that may apply):**

* Particulate Matter (Asbestos, Lead Paint Dust, Arsenic, Welding Fume, etc.)

Description: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Concentration if Known: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dust Visible in Air: (yes) (no)

* Gas and/or Vapors (Chlorine, Ammonia, Methylene Chloride, etc.):

Description: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Concentration if Known: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Liquid Mist (Pesticides, Herbicides, etc.)

Description: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Concentration if Known: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Oil Mist

Description: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Concentration if Known: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Workplace Conditions (circle all that may apply):**

High Heat High Humidity Confined Space Multiple Contaminants

Open Flame Odors No Warning Odors Oxygen Deficient

Sparks/Slag Potential Eye Irritation Possible IDLH

Other (please list) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Amount of time per day respirator is worn: Amount of time per month worn:**

1 Hour or Less 1 Day or Less

1-4 Hours 1-5 Days

4 or More Hours 6 or More Days

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

List any additional personal protective equipment used with the respirator (i.e. goggles, Tyvek coveralls, gloves, etc.): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**What level of effort is estimated to be expended while wearing respirator?**

 Extreme High Average Low

Created: November 27, 2001 \Document\Winword\Sops\OPP Respirator Use Evaluation Form

**Appendix G**

**Program Evaluation/Auditing Checklists**

**AUDIT CHECKLIST FOR RESPIRATORY PROTECTION PROGRAM**

Check to ensure that the University has:

* A written respiratory protection program that is specific to the workplace and covers the following:
* Procedures for selecting respirators.
* Medical evaluations of employees required to wear respirators.
* Fit testing procedures.
* Routine use procedures and emergency respirator use procedures.
* Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and maintaining respirators.
* Procedures for ensuring adequate air quality for supplied air respirators.
* Training in respiratory hazards.
* Training in proper use and maintenance of respirators.
* Program evaluation procedures.
* Procedures for ensuring that workers who voluntarily wear respirators (excluding filtering facepieces) comply with the medical evaluation, and cleaning, storing and maintenance requirements of the standard
* A designated program administrator who is qualified to administer the program.
* Updated the written program as necessary to account for changes in the workplace affecting respirator use.
* Provided equipment, training, and medical evaluations at no cost to employees.

**AUDIT CHECKLIST FOR RESPIRATOR SELECTION**

Check that at the University:

* Respiratory hazards in your workplace have been identified and evaluated.
* Employee exposures that have not been, or cannot be, evaluated are

considered IDLH.

* Respirators are NIOSH certified, and used under the conditions of certification.
* Respirators are selected based on the workplace hazards evaluated and workplace and user factors affecting respirator performance and reliability.
* A sufficient number of respirator sizes and models are provided to be acceptable and correctly fit the users.
* For IDLH atmospheres:
* Full facepiece pressure demand SARs with auxiliary SCBA unit or full facepiece pressure demand SCBAs, with a minimum service life of 30 minutes, are provided.
* Respirators used for escape only are NIOSH certified for the atmosphere in which they will be used.
* Oxygen deficient atmospheres are considered IDLH.
* For Non-IDLH atmospheres:
* Respirators selected are appropriate for the chemical state and physical form of the contaminant.
* Air-purifying respirators used for protection against gases and vapors are equipped with ESLIs or a change schedule has been implemented.
* Air-purifying respirators used for protection against particulates are equipped with NIOSH-certified HEPA filters or other filters certified by NIOSH for particulates under 42 CFR part 84.

**AUDIT CHECKLIST FOR MEDICAL EVALUATION FOR RESPIRATOR USE**

Check that at the University:

* All employees have been evaluated to determine their ability to wear a respirator prior to being fit tested for or wearing a respirator for the first time in your workplace.
* A physician or other licensed health care professional (PLHCP) has been identified to perform the medical evaluations.
* The medical evaluations obtain the information requested in Sections 1 and 2, Part A of Appendix C of the standard, 29 CFR 1910.134.
* Employees are provided follow-up medical exams if they answer positively to any of questions 1 through 8 in Section 2, Part A of Appendix C, or if their initial medical evaluation reveals that a follow-up exam is needed.
* Medical evaluations are administered confidentially during normal work hours, and in a manner that is understandable to employees.
* Employees are provided the opportunity to discuss the medical evaluation results with the PLHCP.
* The following supplemental information is provided to the PLHCP before he or she makes a decision about respirator use:
* Type and weight of the respirator.
* Duration and frequency of respirator use.
* Expected physical work effort.
* Additional protective clothing to be worn.
* Potential temperature and humidity extremes.
* Written copies of the respiratory protection program and the Respiratory Protection standard.
* Written recommendations are obtained from the PLHCP regarding each employee’s ability to wear a respirator, and that the PLHCP has given the employee a copy of these recommendations.
* Employees who are medically unable to wear a negative pressure respirator are provided with a powered air-purifying respirator (PAPR) if they are found by the PLHCP to be medically able to use a PAPR.
* Employees are given additional medical evaluations when:
* The employee reports symptoms related to his or her ability to use a respirator.
* The PLHCP, respiratory protection program administrator, or supervisor determines that a medical reevaluation is necessary.
* Information from the respiratory protection program suggests a need for reevaluation.
* Workplace conditions have changed in a way that could potentially place an increased burden on the employee’s health.

**AUDIT CHECKLIST FOR RESPIRATOR FIT TESTING**

Check that:

* Employees who are using tight fitting respirator facepieces have passed an appropriate fit test prior to being required to use a respirator.
* Fit testing is conducted with the same make, model, and size that the employee will be expected to use at the worksite.
* Fit tests are conducted annually and when different respirator facepieces are to be used.
* Provisions are made to conduct additional fit tests in the event of physical changes in the employee that may affect respirator fit.
* Employees are given the opportunity to select a different respirator facepiece, and be retested, if their respirator fit is unacceptable to them.
* Fit tests are administered using OSHA-accepted QNFT or QLFT protocols.
* QLFT is only used to fit test either PAPRs, SCBAs, or negative pressure APRs that must achieve a fit factor of 100 or less.
* QNFT is used in all situations where a negative pressure respirator is intended to protect workers from contaminant concentrations greater than 10 times the PEL.
* When QNFT is used to fit negative pressure respirators, a minimum fit factor of 100 is achieved for tight-fitting half-facepieces and 500 for full-facepieces.
* For tight-fitting atmosphere-supplying respirators and powered air-purifying respirators:
* Fit tests are conducted in the negative pressure mode.
* QLFT is achieved by temporarily converting the facepiece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure APR
* QNFT is achieved by modifying the facepiece to allow for sampling inside the mask midway between the nose and mouth. The facepiece is restored to its NIOSH approved configuration before being used in the workplace.

**AUDIT CHECKLIST FOR PROPER USE OF RESPIRATORS**

Check to be certain that:

* Workers using tight-fitting respirators have no conditions, such as facial hair, that would interfere with a face-to-facepiece seal or valve function.
* Workers wear corrective glasses, goggles, or other protective equipment in a manner that does not interfere with the face-to-facepiece seal or valve function.
* Workers perform user seal checks prior to each use of a tight-fitting respirator.
* There are procedures for conducting ongoing surveillance of the work area for conditions that affect respirator effectiveness, and that, when such conditions exist, you take steps to address those situations.
* Employees are permitted to leave their work area to conduct respirator maintenance, such as washing the facepiece, or to replace respirator parts.
* Employees do not return to their work area until their respirator has been repaired or replaced in the event of breakthrough, a leak in the facepiece, or a change in breathing resistance.
* There are procedures for respirator use in IDLH atmospheres and during interior structural firefighting to ensure that: the appropriate number of standby personnel are deployed; standby personnel and employees in the IDLH environment maintain communication; standby personnel are properly trained, equipped, and prepared; you will be notified when standby personnel enter an IDLH atmosphere; and you will respond to this notification.
* Standby personnel are equipped with a pressure demand or other positive pressure SCBA, or a positive pressure supplied air respirator with an escape SCBA, and appropriate retrieval equipment or other means for rescue.
* Procedures for interior structural firefighting require that: at least two employees enter the IDLH atmosphere and remain in contact with one another at all times; at least two standby personnel are used; and all firefighting employees use SCBAs.

**AUDIT CHECKLIST FOR RESPIRATOR MAINTENANCE AND CARE**

Check to make sure that:

***Cleaning and Disinfecting***

* Respirators are provided that are clean, sanitary, and in good working order.
* Respirators are cleaned and disinfected using the procedures specified in Appendix B-2 of the standard.
* Respirators are cleaned and disinfected:
* As often as necessary when issued for the exclusive use of one employee.
* Before being worn by different individuals.
* After each use for emergency use respirators.
* After each use for respirators used for fit testing and training.

***Storage***

* Respirators are stored to protect them from damage from the elements, and from becoming deformed.
* Emergency respirators are stored:
* To be accessible to the work area.
* In compartments marked as such.
* In accordance with manufacturer’s recommendations.

***Inspections***

* Routine-use respirators are inspected before each use and during cleaning.
* SCBAs and emergency respirators are inspected monthly and checked for proper function before and after each use.
* Emergency escape-only respirators are inspected before being carried into the workplace for use.
* Inspections include:
* Check of respirator function
* Tightness of connections
* Condition of the facepiece, head straps, valves, and cartridges.
* Condition of elastomeric parts.
* For SCBAs, inspection includes checking that cylinders are fully charged, and that regulators and warning devices function properly.
* Emergency use respirators are certified by documenting the inspection, and by tagging the information either to the respirator or its compartment, or storing it with inspection reports.

***Repairs***

* Respirators that have failed inspection are taken out of service .
* Repairs are made only by trained personnel.
* Only NIOSH-approved parts are used.
* Reducing and admission valves, regulators and alarms are adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

**AUDIT CHECKLIST FOR SUPPLIED AIR RESPIRATOR BREATHING AIR QUALITY AND USE**

Check that:

***General***

* Compressed breathing air meets the requirements for Grade D breathing air.
* Compressed oxygen is not used in respirators that have previously used compressed air.
* Oxygen concentrations greater that 23.5 percent are used only in equipment designed for oxygen service or distribution.
* Breathing air couplings are incompatible with outlets for other gas systems.
* Breathing gas containers are marked with appropriate NIOSH certification.

***Breathing Air Cylinders***

* Cylinders are tested and maintained according to DOT 49 CFR Part 173 and 178.
* A certificate of analysis for breathing air has been obtained from the supplier.
* Moisture content in the cylinder does not exceed a dew point of -50 o F at 1 atmosphere pressure.

***Compressors***

* Are constructed and situated to prevent contaminated air from getting into the system.
* Are set up to minimize the moisture content.
* Are equipped with in-line air-purifying sorbent beds and/or filters that are maintained or replaced following manufacturer’s instructions.
* Are tagged with information on the most recent change date of the filter and an authorizing signature.
* Carbon monoxide does not exceed 10 ppm in the breathing air from compressors that are not oil-lubricated.
* High-temperature and carbon monoxide alarms are used on oil-lubricated compressors, or that the air is monitored often enough to ensure that carbon monoxide does not exceed 10 ppm if only a high-temperature alarm is used.

**AUDIT CHECKLIST FOR RESPIRATOR TRAINING AND INFORMATION**

Check that:

* Employees can demonstrate knowledge of:
* Why the respirator is necessary and the consequences of improper fit, use, or maintenance.
* Limitations and capabilities of the respirator.
* How to effectively use the respirator in emergency situations.
* How to inspect, put on, remove, use, and check the seals of the respirator.
* Maintenance and storage procedures.

The general requirements of the respirator standard.

* Training is understandable to employees.
* Training is provided prior to employee use of a respirator.
* Retraining is provided:
* Annually.
* Upon changes in workplace conditions that affect respirator use.
* Whenever retraining appears necessary to ensure safe respirator use.
* Appendix D of the standard is provided to voluntary users.

**AUDIT CHECKLIST FOR RESPIRATORY PROTECTION PROGRAM EVALUATION**

Check that:

* Workplace evaluations are being conducted as necessary to ensure that the written respiratory protection program is being effectively implemented.
* Employees required to wear respirators are being regularly consulted to asses the employees’ views and to identify problems with respirator fit, selection, use and maintenance.
* Any problems identified during assessments are corrected.

**AUDIT CHECKLIST FOR RESPIRATORY PROTECTION PROGRAM RECORD KEEPING**

Check that:

* Records of medical evaluations have been retained.
* Fit testing records have been retained.
* A copy of the current respiratory protection program has been retained.
* Access to these records is provided to affected employees.