

UNIVERSITY OF DELAWARE

OCCUPATIONAL HEALTH & SAFETY

RESPIRATORY PROTECTION PROGRAM

JULY 2006

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1.0 Purpose

The University of Delaware has determined that employees and in certain cases, graduate and undergraduate students, in various departments are exposed to respiratory hazards during routine and emergency operations. These hazards include wood dust, particulates, and vapors, etc. and in some cases represent Immediately Dangerous to Life or Health (IDLH) conditions. The purpose of this program is to ensure that all University of Delaware employees and in certain circumstances students are protected from exposure to these respiratory hazards.

Engineering controls, such as ventilation and substitution of less toxic materials, are the first line of defense at the University of Delaware; however, engineering controls have not always been feasible for some of our operations, or have not always completely controlled the identified hazards. In these situations, respirators and other protective equipment must be used. Respirators are also needed to protect employees' health during emergencies. The work processes requiring respirator use at the University of Delaware are outlined in Table 1 in the Scope and Application section of this program.

In addition, some employees have expressed a desire to wear respirators during certain operations that do not require respiratory protection. As a general policy the University of Delaware will review each of these requests on a case-by-case basis. If the use of respiratory protection in a specific case will not jeopardize the health or safety of the worker(s), the University of Delaware will provide respirators for voluntary use. As outlined in the Scope and Application section of this program, voluntary respirator use is subject to certain requirements of this program.

2.0 Scope and Application

This program applies to all employees, and in some cases students, who are required to wear respirators during normal work operations, and during some non-routine or emergency operations such as a spill of a hazardous substance.

In addition, any employee who voluntarily wears a respirator when a respirator is not required (i.e., in certain maintenance and coating operations) is subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with certain information specified in this section of the program.

Employees participating in the respiratory protection program do so at no cost to them. The expense associated with training, medical evaluations and respiratory protection equipment will be borne by the University

¹ Employees who voluntarily wear filtering face pieces (dust masks) are not subject to the medical evaluation, cleaning, storage, and maintenance provisions of this program.

Table 1: University of Delaware Departments Using Respirators

Department/Process	Respirator Hazard	Respirator	V/R*	Cartridge ** Change Schedule
Ag/ Ag Engineering (Pesticide Application)	Dusts, Pesticide Aerosols, Vapors	1/2 and Full Face APR OVA & N95	V/R	1X/Month
Allen Lab (Decon)	Formaldehyde Vapor, Possible IDLH	Full Face APR HCHO SCBA	R	4X/Year
Animal Care (Cage Changing)	Animal Allergens	N95 Disposable	R	1X/Shift or Visit
CCM (Mixing Styrene and Accelerator)	Various Dusts, Fibers, Organics	1/2 Face APR, OV & N95	V/R	1X/Month
Custodial (General Cleaning, Mold Abatement)	Household Dust, Mold	N95 Disposable	V/R	1X/Shift
Farm (Pesticide Application)	Dusts, Welding Fumes, Pesticide Aerosols & Vapors	1/2 Face APR, OV & P100	V/R	1X/Month
Farm PLSC/Greenhouse (Pesticide Application)	Dusts, Pesticide Aerosols & Vapors	1/2 Face APR, OV, N95, N95 Disposable	V/R	1X/Month; 1X/Shift
Georgetown Research Education Center (Changing Chicken Houses, Respond to O ₂ Diff Alarm)	Dusts, Ammonia, Pesticide Aerosols & Vapors, O ₂ Def, IDLH	1/2 and Full Face APR with OV & N95, Ammonia & N95 SCBA, N95 Disposable	V/R	1X/Month 1XShift/Visit
Grounds (Pesticide)	Dusts, Allergens, Pesticide	1/2 and Full Face APR	V/R	1X/Month

Application, Trash Pick Up)	Aerosols & Vapors	with OV & N95, Defender		
Pest Control (Pesticide Application)	Dusts, Pesticide Aerosols & Vapors	1/2 and Full Face APR with OV & N95	V/R	1X/Month
HVAC (Work on Hazardous Exhaust Systems)	Potential Mixed Dust, Aerosols, Vapors & Gases, Emergency CFC Alarm	1/2 and Full Face APR with Defender Cartridge, SCBA, N95 Disposable	R	1X/Month
IEC (Load and Unload Substrates)	Dusts, Heavy Metals Aerosols, Gases & Vapors	1/2 Face APR, Defender Cartridges	V/R	1X/Month
Insulation Shop (Asbestos and Mold Abatement)	Dusts, Lead, Asbestos, Fiberglass, Mold	1/2 Face APR, P100 Full Face PAPR P100	V/R	2X/Month
Lewes (Pesticide Application, Painting/Sanding)	Lead, Dusts, Asbestos, Pesticide Aerosols & Vapor	1/2 Face APR with OV & N95, P100 for Asbestos and Lead	V/R	1X/Month
Lewes RVCH (Painting, Sanding)	Lead, Dusts, Asbestos, Pesticide Aerosol & Vapors	1/2 Face APR with OV & N95, P100 for Asbestos and Lead	V/R	1X/Month
Library (Cleaning Mold from Collections)	Dusts, Mold	N95 Disposable	V/R	1X/Shift
OHS (Responding to Unknown Chemical Spills, Asbestos, Mold)	All Emergency Response	1/2 and Full Face APR, Full Face with Defender, PAPRP100 SCBA, N95	R	1X/Month

		Disposable		
Paint Shop (Painting, Sanding)	Dusts, Solvents, Paints, Lead	1/2 and Full Face APRS with OVA & N95	V/R	1X/Month
SHS (Treating Possible Case of TB)	Airborne Infectious Diseases	N95 Disposable	R	Isolation Per Visit otherwise 1X/Shift
UDECU	Airborne Infectious Diseases	N95 Disposable	R	During treatment and transport
* In many cases, the Voluntary versus Required Classification is made through a specific hazard assessment for a particular job.				
** N95 Prefilters should be changed daily or more frequently as required.				

3.0 Responsibilities Inform their supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.

Program Administrator

The Program Administrator is responsible for administering the respiratory protection program. Duties of the program administrator include:

- Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
- Selection of respiratory protection options.
- Monitoring respirator use to ensure that respirators are used in accordance with their certifications.
- Arranging for and/or conducting training.
- Ensuring proper storage and maintenance of respiratory protection equipment.
- Conducting qualitative fit testing or quantitative fit testing per [OSHA 1910.134](#).
- Administering the medical surveillance program.
- Maintaining records required by the program.
- Evaluating the program.
- Updating written program, as needed.

The Program Administrator for the University of Delaware is Joseph A. Miller, CIH.

Supervisors

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 that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

- Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and medical evaluations.
- Ensuring the availability of appropriate respirators and accessories.
- Being aware of tasks requiring the use of respiratory protection.
- Enforcing the proper use of respiratory protection when necessary.
- Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan.
- Ensuring that respirators fit well and do not cause discomfort.
- Continually monitoring work areas and operations to identify respiratory hazards.
- Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

Employees

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

- Care for and 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 new one that fits properly.

4.0 Program Elements

Selection Procedures

The Program Administrator will select respirators to be used on site, based on the hazards to which workers are exposed and in accordance with all OSHA Standards. The Program Administrator will conduct a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency. The hazard evaluation will include:

- 1) Identification and development of a list of hazardous substances used in the workplace, by department, or work process.
- 2) Review of work processes to determine where potential exposures to these hazardous substances may occur. This review shall be conducted by surveying the workplace, reviewing process records, and talking with employees and supervisors.

3) Exposure monitoring to quantify potential hazardous exposures. Monitoring if required, will be conducted by or arranged for by the Department of Occupational Health and Safety (DOHS) of the University.

The results of current hazard evaluations are listed in Table 2 at the end of this program, which contains the sampling data that this section was based on.

Updating the Hazard Assessment

The Program Administrator must revise and update the hazard assessments as needed (i.e., any time work process changes may potentially affect exposure). If an employee feels that respiratory protection is needed during a particular activity, he/she is to contact his or her supervisor or the Program Administrator. The Program Administrator will evaluate the potential hazard, arranging for outside assistance as necessary. The Program Administrator will then communicate the results of that assessment back to the employees. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly.

NIOSH Certification

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall 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.

Voluntary Respirator Use

The University of Delaware will provide respirators at no charge to employees for voluntary use if approved by the Program Administrator.

The Program Administrator will provide all employees who voluntarily choose to wear respirators with a copy of [Appendix D](#) of the Standard. (Appendix D details the requirements for voluntary use of respirators by employees.) Employees choosing to wear a half facepiece APR must comply with the procedures for Medical Evaluation, Respirator Use, and Cleaning, Maintenance and Storage.

The Program Administrator shall authorize voluntary use of respiratory protective equipment as requested on a case-by-case basis, depending on specific workplace conditions and the results of the medical evaluations.

Medical Evaluation

Employees who are either required to wear respirators, or who choose to wear an APR voluntarily, must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician has determined that they are

medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.

A licensed physician or physician's assistant at a DOHS provider will provide the medical evaluations. Medical evaluation procedures are as follows:

- The medical evaluation will be conducted using the questionnaire provided in [Appendix C](#) of the Respiratory Protection Standard. The Program Administrator will provide a copy of this questionnaire to all employees requiring medical evaluations.
- To the extent feasible, the company will assist employees who are unable to read the questionnaire (by providing help in reading the questionnaire). When this is not possible, the employee will be sent directly to the physician for medical evaluation.
- All affected employees will be given a copy of the medical questionnaire to fill out. Employees will be permitted to fill out the questionnaire on company time.
- Follow-up medical exams will be granted to employees as required by the Standard, and/or as deemed necessary by the DOHS provider.
- All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.
- The Program Administrator will provide the DOHS provider with a copy of this program, a copy of the Respiratory Protection Standard the list of hazardous substances by work area, and for each employee requiring evaluation: his or her work area or job title, proposed respirator type and weight, length of time required to wear respirator, expected physical work load (light, moderate, or heavy), potential temperature and humidity extremes, and any additional protective clothing required.
- Any employee required for medical reasons to wear a positive pressure air purifying respirator will be provided with a powered air purifying respirator.
- After an employee has received clearance and begun to wear his or her respirator, additional medical evaluations will be provided under the following circumstances.
 - Employee reports signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.
 - The DOHS provider informs the Program Administrator that the employee needs to be reevaluated;
 - Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation;
 - A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

A list of the University of Delaware employees currently included in medical surveillance is provided in Table 2 of the program.

All examinations and questionnaires are to remain confidential between the employee and the physician. The frequencies of re-evaluations will be based on those dictated by other regulations and recommendations from the University LHCP.

Fit Testing

Fit testing is required for all employees and students required to wear a respirator.

All employees who are required to wear any respirator will be fit tested:

- Prior to being allowed to wear any respirator with a tight fitting facepiece.
- Annually.
- When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).

Employees will be fit tested with the make, model, and size of respirator that they will actually wear. Employees will be provided with several models and sizes of respirators so that they may find an optimal fit. Fit testing of PAPRs is to be conducted in the negative pressure mode.

The Program Administrator will conduct fit tests following the OSHA approved methods for [QLFT and QNFT](#) of the Respiratory Protection Standard.

Respirator Use

General Use Procedures:

- Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.
- All employees shall conduct user seal checks each time that they wear their respirator. Employees shall use either the positive or negative pressure check (depending on which test works best for them) specified in [Appendix B-1](#) of the Respiratory Protection Standard
- All employees shall be permitted to leave the work area to go to the locker room to maintain their respirator for the following reasons: to clean their respirator if the respirator is impeding their ability to work, change filters or cartridges, replace parts, or to inspect respirator if it stops functioning as intended. Employees should notify their supervisor before leaving the area.
- Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the facepiece-to-face seal.

Emergency Procedures:

The following work areas have been identified as having foreseeable emergencies:

University situations:

- All areas served by hazardous gas detection systems
- Chemical spills
- Fires

Emergency respirators are located:

- OHS vehicle 215 (4)
- OHS spare (2)
- OHS Garage Hip Pack (3)
- General Services Mechanical Room 111 (2)
- Ewing Mechanical Room (2)
- Allen Mechanical Room 134 (2)
- Pencader Mechanical Room (2)
- Worrilow Hallway by Room 114 (2)
- Gold Arena by Mech. Room Door
- Blue Arena by Mech. Room Door
- Otis Smith Lab by Room 120 - Lewes

Respiratory protection in these instances is for emergency purposes only. University of Delaware employees are not trained as emergency responders, and are not authorized to act in such a manner. Exceptions: DOHS Personnel

Respirator Malfunction:

1. APR Respirator Malfunction:

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

2. Atmosphere-supplying Respirator Malfunction:

All workers wearing atmosphere-supplying respirators will work with a buddy. Buddies shall assist workers who experience an SAR malfunction to leave the hazardous location when a malfunction is signaled.

IDLH Procedures:

The Program Administrator has identified the following area as presenting the potential for IDLH conditions:

DOHS responses, confined spaces, Allen Lab. See also Emergency Procedures, page 12.

Air Quality

For supplied-air respirators, only Grade D breathing air shall be used in the cylinders. The Program Administrator will coordinate supplies of compressed air with the CHO and the company's vendor, and require testing to certify that the air in the cylinders meets the specifications of Grade D breathing air.

Cleaning, Maintenance, Change Schedules and Storage

Cleaning

Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary, but at least once a day.

Atmosphere supplying and emergency use respirators are to be cleaned and disinfected after each use.

A. The following procedure is to be used when cleaning respirators:

- Disassemble respirator, removing any filters, canisters, or cartridges.
- Wash the facepiece and associate parts in a mild detergent with warm water. Do not use organic solvents.
- Rinse completely in clean warm water.
- Air dry in a clean area.
- Reassemble the respirator and replace any defective parts.
- Place in a clean, dry plastic bag or other air tight container.
- [Refer to Appendix B-2.](#)

B. The following procedure is to be used for disinfection of respirators for common use:

Follow the procedures above substituting an approved product with both detergent and disinfecting properties.

Note: The Program Administrator will ensure an adequate supply of appropriate cleaning and disinfection material at the cleaning station. If supplies are low, employees should contact their supervisor, who will inform the Program Administrator.

Maintenance

Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee. Maintenance involves a 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. Repairs to regulators or alarms of atmosphere-supplying respirators will be conducted by the manufacturer.

The following checklist will be used when inspecting respirators:

- Facepiece:
cracks, tears, or holes
facemask distortion
cracked or loose lenses/faceshield
- Headstraps:
breaks or tears
broken buckles
- Valves:
residue or dirt
cracks or tears in valve material
- Filters/Cartridges:
approval designation
gaskets
cracks or dents in housing
proper cartridge for hazard
- 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 in a designated area that is free of respiratory hazards. Situations when this is permitted include to wash their face and respirator facepiece to prevent any eye or skin irritation, to replace the filter, cartridge or canister, and if they detect vapor or gas breakthrough or leakage in the facepiece or if they detect any other damage to the respirator or its components.

Change Schedules

Employees wearing APRs or PAPRs with P100 filters for protection against wood dust and other particulates shall change the cartridges on their respirators when they first begin to experience difficulty breathing (i.e., resistance) while wearing their masks.

Based on discussions with our respirator distributor about the University of Delaware's exposure conditions, employees voluntarily wearing APRs with organic vapor cartridges shall change the cartridges on their respirators following the change out schedule listed in Table #1.

Storage

Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each employee will clean and inspect their own air-purifying respirator in accordance with the provisions of this program and will store their respirator in a plastic bag in their own locker. Each employee will have his/her name on the bag and that bag will only be used to store that employee's respirator.

Emergency respirators are located:

- OHS vehicle 215 (4)
- OHS spare (2)
- OHS Garage Hip Pack (3)
- General Services Mechanical Room 111 (2)
- Ewing Mechanical Room (2)
- Allen Mechanical Room 134 (2)
- Pencader Mechanical Room (2)
- Worrilow Hallway by Room 114 (2)
- Gold Arena by Mech. Room Door
- Blue Arena by Mech. Room Door
- Otis Smith Lab by Room 120 - Lewes

The Program Administrator will store the University of Delaware's supply of respirators and respirator components in their original manufacturer's packaging in the equipment storage room.

Defective Respirators

Respirators that are defective or have defective parts shall be taken out of service immediately. If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his or her supervisor. Supervisors will give all defective respirators to the Program Administrator. The Program Administrator 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 similar make, model, and size. All tagged out respirators will be kept in the OHS Garage or the OHS Lab.

Training

The Program Administrator will provide training to respirator users and their supervisors on the contents of the University of Delaware's Respiratory Protection Program and their responsibilities under it, and on the OSHA Respiratory Protection Standard. Workers will be

trained prior to using a respirator in the workplace. Supervisors will also be trained prior to using a respirator in the workplace or prior to supervising employees that must wear respirators.

The training course will cover the following topics:

- the University of Delaware's Respiratory Protection Program
- the OSHA Respiratory Protection Standard
- respiratory hazards encountered at the University of Delaware 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
- maintenance and storage
- medical signs and symptoms limiting the effective use of respirators

Employees will be retrained annually or as needed (e.g., if they change departments and need to use a different respirator). Employees must demonstrate their understanding of the topics covered in the training through hands-on exercises. A written test or WebCT Training may be used. Respirator training will be documented by the Program Administrator and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

5.0 Program Evaluation

The Program Administrator will conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring and a review of records.

Problems identified will be noted in an inspection log and addressed by the Program Administrator. These findings will be reported to the University of Delaware's management, and the report will list plans to correct deficiencies in the respirator program and target dates for the implementation of those corrections.

6.0 Documentation and Recordkeeping

A written copy of this program and the OSHA Standard is kept in the Program Administrator's office and is available to all employees who wish to review it. Also maintained in the Program Administrator's office are copies of training and fit test records. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

A wallet card detailing respirator type, fit test date, etc. will be issued to all employees required to wear a respirator (see next page).

The Program Administrator will also maintain copies of the medical records for all employees

covered under the respirator program. The completed medical questionnaire and the physician's documented findings are confidential and will remain at the designated DOHS provider. The company will only retain the physician's written recommendation regarding each employee's ability to wear a respirator.

Table 2. University of Delaware Hazard Assessments

Department/Process	Contaminants	Exposure Levels Actual or Anticipated	Published Allowable Limits	Controls*
Ag/ Ag Engineering (Pesticide Application) Welding	Dusts, Pesticide Aerosols, Vapors			Follow WPS reentry requirements. Use local exhaust (snorkel) for welding. APR's with OV and N95 prefilters.
Allen Lab (Decon)	Formaldehyde Vapor, Possible IDLH Poultry diseases/possible zoonoses		20 ppm IDLH .75 ppm PEL .2-0 ppm STEL	Control lab atmospheres using auto and manual dampers. SCBA full-face APR with formaldehyde cartridge. N95 disposables. PAPRS with P100 cartridges.
Animal Care (Cage Changing)	Animal Allergens Ammonia Chlorine Dioxide			Use engineering controls (HEPA filtered change tables) N95 dust masks disposables
CCM (Mixing Styrene and Accelerator)	Various Dusts, Fibers, Organics			Use mechanical exhaust (snorkels) and paint spray booth. APR's with OV and N95 prefilters.

				N95 disposables.
Custodial (General Cleaning, Mold Abatement)	Household Dust, Mold			HEPA equipped vacuums. Wet wiping and moping. N95 disposable dust masks.
Farm (Pesticide Application) Welding	Dusts, Welding Fumes, Pesticide Aerosols & Vapors			WPS filtered air tractor cabs. APR's with OV and N95 prefilters.
Farm PLSC/Greenhouse (Pesticide Application)	Dusts, Pesticide Aerosols & Vapors		OSHA - Dust 15 mg/m ³ inhal. 5 mg/m ³ respir. ACGIH - 10 mg/m ³ inhal. 3 mg/m ³ respir.	APR's with OV and N95 prefilters
Georgetown Research Education Center (Changing Chicken Houses, Respond to O ₂ Diff Alarm) Pesticide Application Welding Diagnostic Lab	Dusts, Ammonia, Pesticide Aerosols & Vapors, O ₂ Def, IDLH Poultry Diseases. Possible zoonoses.			Filtered air tractor cabs. APR's with OVA and N95 prefilters. APR's with ammonia and prefilters. N95 disposables SCBAs
Grounds (Pesticide Application,	Dusts, Allergens, Pesticide Aerosols &			Spray during optimal weather conditions.

Trash Pick Up)	Vapors			APR's with OVA and N95 prefilters.
Pest Control (Pesticide Application)	Dusts, Pesticide Aerosols & Vapors			APR's with OVA and N95 prefilters. Substitute less toxic materials.
HVAC (Work on Hazardous Exhaust Systems)	Potential Mixed Dust, Aerosols, Vapors & Gases, Emergency CFC Alarm			Notify researchers to stop experiments, cap all chemical containers, turn off gases. APR's with Defender cartridges. Heavy refrigeration. SCBA for CFC alarms. N95 disposables.
IEC (Load and Unload Substrates)	Dusts, Heavy Metals Aerosols, Gases & Vapors Cadmium Selenium IN???			Use HEPA vacuums. APR's with Defender cartridges.
Insulation Shop (Asbestos and Mold Abatement)	Dusts, Lead, Asbestos, Fiberglass			Use containment with negative air, HEPA vacuums. Wet methods. Full-face PAPR's with P100 cartridges. Half-face APR's with P100 cartridges.
Lewes	Lead, Dusts, Asbestos,			Spray during optimal

(Pesticide Application, Painting/Sanding) Welding	Pesticide Aerosols & Vapor			weather conditions. APR's with OV and N95 prefilters for all except
Lewes RVCH (Painting, Sanding) Welding Confined Spaces	Lead, Dusts, Asbestos, Pesticide Aerosol & Vapors O ₂ Deficiency/fire fighting			Sand, paint in optimal weather conditions. APR's with OV and N95 prefilters. N95 disposables. SCBAs-O ₂ deficiency and fires.
Library (Cleaning Mold from Collections)	Dusts, Mold			Use HEPA filtered enclosure and vacuum. APR's with P100 cartridges. N95 disposables.
OHS (Responding to Chemical Spills) Known and Unknown, also CBRN incidents Routine chemical waste management Spills of possible BBP fluids/tissues.	All Emergency Response			Determine what chemical, biological or nuclear agents involved. Using SCBA, scan for specific agent if equipped and with back-up present. For routine chemical waste management, use engineering controls, i.e. walk-in hood.
Paint Shop (Painting, Sanding)	Dusts, Solvents, Paints, Lead			Substitute less hazardous materials. Half and full-face APR's with OVA and N95

				prefilters. N95 disposables.
SHS (Treating Possible Case of TB)	Airborne Infectious Diseases			Follow infection control practices. Use isolation room where possible. N95 disposables.
UDECUC	Airborne Infectious Diseases			Follow infection control practices, N95 disposables
* Every effort should be made by the supervisor to substitute less hazardous materials and to use all available engineering controls to reduce exposures.				