CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
CORPORATE ENVIRONMENTAL, HEALTH AND SAFETY PROCEDURE

CEHSP S04.00 – Respiratory Protection Program
Revision 32: 10/10/2017 Effective Date: 10/11/2017

CONTENTS

1.0 PURPOSE

IT IS THE POLICY OF CON EDISON TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO THE USE OF RESPIRATORY PROTECTION. This procedure presents the requirements for the use of ***respiratory protective equipment*** to control work hazards at Con Edison.

2.0 APPLICABILITY

This Corporate Environmental, Health and Safety Procedure (CEHSP) applies to the use of respiratory protection by Con Edison employees. Following this program will minimize the potential for exposure to workplace inhalation hazards and associated injuries.. Respiratory protection must be used by personnel to prevent exposure to harmful atmospheres (see criteria in Section 4.1).

The employees' optional use of respiratory protective equipment is prohibited for work operations, or in areas that do not require the use of respirators, except *when mandated by other regulations*. Environment, Health, and Safety (EH&S) will evaluate operations and determine whether protection is required.

3.0 INTRODUCTION

Potential occupational exposures to airborne hazards (***particulates***, ***radionuclides***, ***gases***, ***vapors***, and ***oxygen-deficient atmospheres***) are managed in accordance with the follows a hierarchy of controls. Engineering controls (general and local exhaust ventilation, enclosing or isolating the process, substitution of a less hazardous process or material) are the preferred method for minimizing exposure potential. If engineering controls are not feasible, administrative controls (rotating jobs and shift changes) may be used, if not prohibited by law, to minimize exposures to ***contaminants***. Respiratory protection is required when other effective controls are not feasible or while they are being implemented.

For the worker to be protected each time a respirator is donned, the type and concentration of the contaminant must be correctly identified, the correct, properly maintained respirator must be selected, and a trained and medically qualified worker must correctly don the unit. Any omission or deviation from a prescribed step may put the worker at risk and compromise the desired level of control.

4.0 COMPLIANCE REQUIREMENTS

Con Edison has established and implemented a written respiratory protection program with operation-specific procedures. Under this program, all personnel who wear respirators must be evaluated annually to confirm that they are medically qualified. All personnel who wear respiratory protection must be fit tested annually. They must be clean-shaven before any respirator use, except for a mustache that does not extend below the lip line. This CEHSP must be followed to ensure that personnel who don respiratory protection do so safely and achieve the intended level of protection. Each organization that has employees who use or may use respirators must develop a written Site-Specific Respiratory Protection Plan, which must be approved by EH&S – Industrial Hygiene.

The site-specific plans are intended to provide specific details not addressed within this CEHSP. These plans should contain a statement that incorporates this CEHSP by reference. Attachment 1 presents the topic areas that must be addressed in the site-specific respiratorory protection plan. [1] R

4.1 EXPOSURE ASSESSMENTS

EH&S has assessed company operations to determine the need for and required levels of respiratory protection. Local EH&S is required to evaluate their operations to determine whether

these existing evaluations are applicable to current operations. New operations must also be identified by local EH&S for evaluation of respiratory needs under the guidance of EH&S – Industrial Hygiene. ***Exposure assessments*** must include identification of the materials used and tasks performed, and the potential for exposure to hazardous materials. When this assessment is performed, the results of monitoring will be compared to one or more of the following applicable limits.

- ***Occupational Safety and Health Administration (OSHA)*** – Permissible Exposure Limits (PEL), Short-term Exposure Limit (STEL) and Ceiling Limit(s).
- ***American Conference of Governmental Industrial Hygienists*** – Threshold Limit Values (TLV).
- Con Edison – ***Company Exposure Guidelines***.
- ***National Institute for Occupational Safety and Health (NIOSH)*** – Recommended Exposure Limit.

Based on the results of this comparison, EH&S – Industrial Hygiene, working with local EH&S, will determine the proper type of respiratory protection for the task. Attachment 2. [2] R/P provides guidance on respirator selection for various activities.

4.2 RESPIRATOR SELECTION AND CLASSIFICATION

Depending on the conditions encountered in the work area and the exposures generated by a task, either ***air-purifying respirators (APRs)*** or ***atmosphere-supplying respirators*** may be required. Atmosphere-supplying respirators have their own supply of breathable air, either through a hose connected to a source outside the work area or to a bottle of compressed air carried by the wearer. APRs only filter contaminants from the air. APRs may be used only in locations that contain breathable air and contaminant concentrations that do not exceed a specified level. Table 1 summarizes the advantages and disadvantages of APR and atmosphere-supplying respirators.

TABLE 1

The Pros and Cons of Air-Purifying and Atmosphere-Supplying Respirators

Advantages	Disadvantages
Air-Purifying Respirators – Negative-Pressure Respirators	
Light, easy to use, Low maintenance, inexpensive	• Frequent filter and/or cartridge changes • Low protection factor
Powered Air-Purifying Respirators (PAPRs)	
Higher protection than APR	• Bulky battery pack and hose • Requires daily charging • Difficult to clean, frequent filter changes • High maintenance and expense
Atmosphere-Supplying Respirators	
Highest protection Low maintenance	• Planning to ensure adequate supply of compressed air • Documentation to confirm required air quality • High cost • Equipment weight

Advantages	Disadvantages
	• Hose and bottle restrict movement

The following criteria must be considered when selecting a respirator:

- **The oxygen content in the environment.** APRs can be used only when the oxygen content is between 19.5% and 23.0%.
- **The activity to be performed.** Additional stresses and hazards may be associated with the work location and must be considered. For example, physical work effort, additional protective clothing and equipment, and wearing a respirator in an extreme temperature and humid environment places additional stress on the wearer.
- **The specific type and concentration of the contaminant in the air.** The type of contaminant must be considered to ensure that a cartridge/filter is selected that can remove the contaminant from the air. The expected concentration must not exceed the level of protection provided by the respirator.
- **The expected exposure level.**

Respirators must be certified NIOSH according to 42 Code of Federal Regulations (CFR) Part 84, *Approval of Respiratory Protective Devices*. ***NIOSH-approved*** respirators are identified with a certification number.

Attachment 2 identifies respirators used for specific tasks. The respirator type that must be used for any given task will be based on the actual exposure; Attachment 2 is for general guidance only. [3] R

4.3 AIR-PURIFYING RESPIRATORS

APRs cleanse the contaminated atmosphere by drawing the air through cartridges to remove gases, vapors, and particulates (including ***dusts***, ***mists***, and ***fumes)***. Con Edison uses three types of air-purifying, negative-pressure respirators as detailed below:

The most common negative-pressure APRs are designed as half facepiece or full facepiece units. When the user inhales, air is drawn through the cartridge or filter. The drawing in of the air creates a slight negative pressure in the mask. This negative pressure can allow contaminants to enter the mask if not properly fitted.

- The half-facepiece respirator consists of a flexible elastomeric molded facepiece that covers the nose and mouth.
- The full facepiece respirator covers the eyes, nose, and mouth area completely. An integrated facepiece provides eye protection.
- Powered air-purifying respirators (PAPRs) are designed as full facepiece units. The headpiece covers the eyes, nose, and mouth, and is connected by a flexible airline to a battery-powered, filtered air blower. The air is drawn through the filter/cartridge and supplied to the breathing zone. The headpiece can be tight-fitting half mask, full facepiece (APF 50) or loose-fitting helmet/hood/facepiece (APF 25).

The ***assigned protection factors (APFs)*** are 10, 50, 25, and 50 for the half facepiece, full facepiece, loose-fitting facepiece PAPR and tight-fitting facepiece PAPR respectively. For example, the OSHA PEL for lead is 50 micrograms per cubic meter ($\mu g/m^3$), which means that a

half-facepiece negative pressure respirator (assigned protection factor of 10) has a maximum use concentration of 500 $\mu g/m^3$.

APRs have limitations which must be considered when selecting the correct respirator. These limitations include:

- Does not protect against oxygen-deficient atmospheres, skin irritation, or absorption of airborne contaminants
- The proper cartridge or filter must be selected for the particular atmosphere and conditions.
- Must ***not*** be selected for use in situations where:
  - Known or potential oxygen deficiency (<19.5%) conditions exist.
  - The identity/concentration of the contaminant(s) is unknown or the concentration of contaminants exceeds the assigned protection factor or the maximum use concentration, whichever is lower.
  - The level of any contaminant exceeds the ***Immediately Dangerous to Life or Health (IDLH)*** value.
  - A cartridge or canister certified for protection of the contaminant does not exist.
  - The cartridge does not have either an End-of-Service-Life Indicator (ESLI) or an associated filter change schedule detailed in the Site-Specific Respiratory Protection Plan. The filter change schedule for gases and vapors must be based on hours of use and not on an employee tasting or smelling the contaminant.
  - A stressor does not have adequate warning properties, for example, the odor threshold exceeds the established standards. Warning properties are airborne concentrations that can be detected by odor, taste, or skin sensation at or below the OSHA PEL. For example, chemicals without a warning odor may pass through a cartridge unnoticed by the user.

The following general statements provide guidance concerning selecting filters and cartridges for APRs.

- In situations involving exposures to particulates, filters certified by NIOSH, for example, a P-100 filter, must be used.
- Where the task presents potential exposures to vapors and gases, a cartridge with the appropriate sorbent chemical must be used.
- Where the task presents an exposure to a mixture of chemicals, a combination cartridge/filter which is appropriate to each potential exposure must be used.
- Only respirators and cartridges/filters approved by EH&S may be used.

All filters, cartridges, and canisters must be labeled and color coded with the NIOSH-approved label. The label on a canister must not be removed and must remain legible.

COLOR	CONTAMINANTS CONTROLLED
Black	Organic vapors (OV) such as acetone, alcohol, gasoline, etc.
Green	Ammonia and methylamine
Olive	Formaldehyde

COLOR	CONTAMINANTS CONTROLLED
Orange	Mercury
White	Acid gases (AG) such as chlorine, hydrogen chloride, and sulfur dioxide
Yellow	Organic vapors and acid gases (OV/AG)
Magenta	Dust, mists, fumes, asbestos, and radionuclides

Attachment 3 identifies the air-purifying respirators approved for use by Con Edison employees. [4] R/P

4.4 ATMOSPHERE-SUPPLYING RESPIRATORS

Atmosphere-supplying respirators provide the wearer with a source of breathable air that is independent of the surrounding ambient air. For this reason, atmosphere-supplying respirators provide a greater level of protection and can be used in areas that present an oxygen deficiency, unknown concentrations of airborne contaminants, or a highly toxic atmosphere. Only trained personnel may use the equipment.

The two categories of atmosphere-supplying respirators are airline respirators and self-contained breathing apparatus (SCBA). Both of these systems provide breathable air to the wearer. Airline respirators provide air from a remote source, either a cylinder or an air compressor, located outside of the area. SCBA users carry their breathing air supply in a tank. Attachment 4 identifies atmosphere-supplying respirators approved for use by Con Edison employees.

As a precautionary measure, following respirator use in an emergency situation, the affected employees must notify EH&S to determine whether or not a medical evaluation is required. [6] R/P

4.4.1 Breathing Air

To safely use atmosphere-supplying respirators, the quality of breathing air must meet the requirements for ***Grade D breathing air***. These requirements include: (a) oxygen (O_2) content of 19.5 to 23.5 percent; (b) hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less; (c) carbon monoxide (CO) content of 10 ppm or less; (d) carbon dioxide (CO_2) content of 1,000 ppm or less; and (e) lack of noticeable odor. All air supply bottles must be certified by Chem Lab or the breathing air supplier. When air is supplied from a compressor, the breathing air supply to respirators from compressor must meet the requirements of the OSHA respirator standard [5] R as below:

- **Compressor shall not be situated where contaminated air enters into the air-supply system;**
- **To minimize moisture content, the breathing air dew point at atmospheric pressure is 10 degs below the ambient temperature;**

- **Suitable in-line air-purifying sorbent beds and filters must be installed to further ensure breathing air quality. Sorbent beds and filters shall be maintained and replaced or refurbished periodically following the manufacturer's instructions. A tag containing the most recent change date and the signature of the person must be hanged at the compressor;**

- **For compressors that are not oil-lubricated, the employer shall ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.**

4.4.2 Immediately Dangerous to Life or Health Atmospheres

When working in an area that contains an IDLH atmosphere, or when the exposure cannot be identified or reasonably estimated, personnel must follow the procedures presented below. All entries into a confined space must be made in accordance with CEHSP S16.00, *Permit-Required Confined Space Program*.

- The respiratory protection equipment and air monitoring equipment must be tested in an uncontaminated atmosphere prior to entering the hazardous area.
- A rescue plan must be reviewed by all members of the crew prior to entry into the IDLH atmosphere.
- Employees responsible for rescue must be trained in the specific rescue procedures including methods of extrication.
- An employee wearing an SCBA or an airline respirator with an ***escape cylinder*** must not enter a hazardous atmosphere without at least one additional employee outside the hazardous area with suitable rescue equipment and outfitted with a similar breathing apparatus. This individual must be in a standing position and must maintain contact with the entrant either by line of sight or by a communication system. This individual must be trained and equipped to provide effective emergency rescue and must know the procedures for notifying responsible personnel before initiating an emergency entry into an IDLH atmosphere.

4.4.3 Airline Respirators

Con Edison uses only the Type “C” Airline Respirator. This unit consists of a full facepiece, or a hood or helmet with the air delivered to the wearer through the supply hose from either a composite cylinder or a compressor. Two classes of Type “C” airline respirators are approved for use at Con Edison:

- Continuous-flow respirators, which provide a constant flow of air to the wearer.
- Pressure-demand respirators, which provide a continuous flow of air and an additional flow of air when the worker inhales. This design maintains a positive pressure in the facepiece during inhalation, and helps reduce the flow of contaminants into the facepiece and ensure the protection of the worker.

Hydrostatic testing must be performed by an approved qualified vendor and at the frequency required by the cylinder’s specification. (Typically every 5 years for fully wrapped carbon fiber cylinders and steel cylinders) The vendor must attach a label of hydrostatic testing to each cylinder and provide the required documentation.

Composite cylinders must be removed from service after 15 years of service; steel cylinders must be removed from service after 20 years of service. [7] R/P

Except as identified in specific Gas Operations Procedures, airline respirators must be used with an escape cylinder. The escape cylinder provides a short-duration supply of air, for example five minutes, which allows a person to exit a contaminated area if the primary air supply is interrupted**.**

Specific items to consider when using an airline respirator are as follows:

- The maximum hose length allowed is 300 feet.
- All airline respirators must be checked before and after use for leaks and proper airflow, and all fittings and hoses must be checked for wear. In addition, routine monthly (i.e., every 30/31 days) inspections must be conducted on all units. Annual maintenance inspections must be performed by the manufacturer, or manufacturer's certified vendor or a company employee certified by the manufacturer to perform this function. [8] R/P
- Hoses can often present a significant safety concern in the workplace. Airline respirators must not be used when an APR can be substituted based on actual exposure, or when SCBA use is determined to be safer.

4.4.4 Self-Contained Breathing Apparatus

SCBAs provide the highest level of respiratory protection against toxic gases, oxygen deficiency, and unknown concentrations of contaminants. The wearer is independent of the surrounding atmosphere because he/she is breathing from a system separate from the outside air that is providing Grade D breathing air. The SCBA is generally for use in emergency response situations, and infrequently for normal work activities or other non-emergency response activities.

The following specific requirements also apply to SCBA use:

- Only composite cylinders rated to provide 60-minutes of air may be used in SCBAs.
- An approved qualified vendor must perform hydrostatic testing of cylinders at the frequency required by the cylinder's specification. The vendor must attach a label of hydrostatic testing to each cylinder and provide the required documentation.

  Note: A cylinder may be requalified at any time during or before the month and year that the requalification is due. However, a cylinder filled before the requalification becomes due may remain in service until emptied.

- Composite cylinders must be removed from service after 15 years of service.
- Multiple user respirators must be completely disassembled, disinfected, and reassembled between each user.
- Respiratory equipment must be stored to protect against dust, heat, sunlight, extreme cold, excessive moisture, and damaging chemicals. Emergency respiratory equipment must be stored in containers clearly marked to identify the contents. Such equipment must be readily accessible at all times.
- After SCBA use, the spent cylinder must be returned to Astoria Stores for refilling as soon as possible or the cylinder may be refilled on site by the approved vendor.

  Note: A cylinder with a specified service life may not be refilled and offered for transportation after its authorized service life has expired.

- Spare cylinders will be used to replace the spent cylinder from the SCBA unit. [10] R/P
- Monthly (i.e., every 30/31 days) inspections shall be conducted on all equipment.
- Inspection information must be recorded on the form presented in Attachment 7 or an equivalent, maintained by the local Program Administrator and made available for review by EH&S. The documentation must include date of inspection, name of inspector, any remedial action taken, and serial number. Each SCBA unit must have a tag or label attached to the storage compartment that includes the unit's serial number, location, the date of inspection and the name or initials of the inspector. All units that require any remedial action must be taken out of service immediately.
- The manufacturer, a manufacturer-certified vendor, or a Con Edison employee certified by the manufacturer to perform inspections must perform an annual maintenance inspection. Records of these inspections must be maintained by the local Program Administrator and made available for review by EH&S. [11] R/P

4.5 RESPIRATOR USE, INCLUDING FIT TESTING

To ensure that a properly selected respirator provides the desired protection, personnel must be trained in the use of the respirator they will use, certified by a physician to wear the respirator, and fit-tested with the type, style, and brand of respirator to be used. The procedures for fit testing and a form for recording the results of training/fit testing and size check are presented in Attachment 5 and Attachment 6A/B, respectively. Fit testing must be performed either by a ***qualified person*** as defined in this procedure or by a vendor approved by Industrial Hygiene.

Fit testing confirms that the respirator is sealing correctly and that the wearer is drawing the air through the mask and cartridge/filter, instead of through an opening. The following items present the general requirements for fit tests.

- Fit testing is required for each type of APR to be worn. For example, if the employee will wear a 3M half facepiece, an MSA full facepiece, and a 3M disposable respirator, he or she must be fit-tested for all three types and models.
- If the employee will wear a full facepiece PAPR, a Type C pressure-demand unit, or an SCBA, then fit testing must be performed with the same model full facepiece negative pressure to determine the correct size.
- Respirators must be used according to manufacturer's instructions, regulatory requirements, and the selection criteria listed in Section 4.2, Respirator Selection and Classification.
- A respirator may not be used if any item of clothing, other personal protective equipment (PPE), hair, or facial hair interferes with the function or fit of the respirator. [13] R

Precautions associated with the safe use of respirators are as follows:

- Prior to use, each individual must perform a positive/negative pressure test to ensure the respirator fits properly. Fit testing as well as respirator donning and doffing procedures are described in Attachment 5.
- A respirator may not be used unless appropriate air sampling or monitoring is performed to confirm that the respirator is being used within established limits.
- Parts or attachments for one respirator type or brand may not be substituted with parts of another type or brand unless specifically approved by the manufacturers and EH&S.

- Respirators must be worn at all times in designated areas, will be donned in a safe area, and may be removed only in accordance prescribed decontamination procedures in a safe area, or otherwise in accordance with a predetermined emergency removal plan.
- Personnel who require corrective lenses must use a spectacle kit, with the proper prescription lenses, which fits inside the facepiece. Eyewear must not interfere with the fit of the facepiece. Contact lenses may not be worn unless specified by site-specific program and approved by EH&S - Industrial Hygiene.
- If at any time while wearing a respirator an employee feels dizzy or nauseous, or experiences other distress, the person must leave the work area, notify the supervisor, and seek medical attention, if necessary.
- APR filters must be changed if breathing becomes difficult. When changing the filter, personnel must exit the area, doff the respirator, replace the filter, don the respirator, and perform the positive and negative fit tests. Attachment 5 presents the steps to follow to properly don the respirator and perform the positive/negative pressure tests.
- Chemical cartridges may be used for a maximum of 8 hours. This period can be accumulated during 1 day or over a maximum of 10 calendar days. To maximize the cartridge life, chemical cartridges must be stored in a sealed plastic bag between uses. If odor, taste, or irritation is experienced, the cartridge may be expended or the respirator seal may not be effective. If this occurs:
  - Leave the work area.
  - Perform the positive/negative pressure test to check the seal.
  - If the seal is good, replace the cartridge.
  - After replacing the cartridge, perform the positive/negative pressure test before re-entering the work area.
  - If an effective seal is not obtained, the employee must notify the supervisor immediately.
- Factors that impact the useful life of respirator canisters and filters include:
  - Environmental factors such as heat, cold, and humidity.
  - Mixtures of contaminants that may affect the rated capacity of a cartridge or canister.
  - Airflow resistance or heat of absorbent reaction causing undue difficulty in breathing.
  - Damage to the canister or cartridge in such a way that potentially affects its ability to remove contaminants. [14] R/P

4.6 RESPIRATOR INSPECTION PROCEDURES

To lower the probability of respirator failure, all respirators must be inspected before and after each use. Emergency-use respirators do not require an inspection before use; however, such designated emergency use respirator and associated respiratory equipment must be inspected monthly (i.e., every 30/31 days) (NOTE: All SCBA equipment in active use requires monthly inspection whether designated for emergencies or not). Records of these monthly inspections must be maintained until the annual inspection/certification is completed and the unit is retagged.

When inspecting airline and SCBA systems, confirm the operation of the compressor or confirm that the cylinder is full, and ensure proper operation of all alarms. Inspections must be performed and documented in accordance with the form presented in Attachment 7.

The following general respirator inspection procedures must be used:

- Inspect the unit for obvious damage, defects, or deteriorated rubber.
- Check that the facepiece harness is pliable, that fasteners work easily, and that there are no signs of damage, drying, or other potential causes of failure.
- If the respirator is a full-face unit, inspect the lens for damage, diminished visibility, and proper seal.
- Exhalation valve(s) operate to let exhaled air escape from the unit. To inspect, check the valve for debris, residue, or tears which could cause sticking or leakage.
- Inhalation valves operate to let air enter into the unit. To inspect, remove the cartridges, look through the opening from the cartridge holder, and feel inside the pocket to confirm that the passage is clear. Confirm that valves are properly seated, and free of tears, debris, and residue.
- If any part of a respirator is found to be defective, it must be removed from service immediately. [15] R
- Note that respirator equipment tagged out-of-service or otherwise clearly marked as not in active use is exempt from monthly inspection requirements until returned to active use. Returning such equipment to active status must involve an initial inspection prior to use.

4.7 RESPIRATOR MAINTENANCE, CLEANING, AND STORAGE

Respirators must be inspected, maintained, cleaned, ***disinfected***, and stored according to the manufacturer's directions and the guidance provided in this program. Personnel providing cleaning and maintenance of respirators may perform only those elements for which they are trained or certified.

Cleaning and sanitizing of the respirator must be completed in a clean, safe place. Attachment 8 identifies cleaning and disinfecting agents.

Respirators must be cleaned and disinfected after each use, and before another person may use the respirator. Respirators must be stored in a clean, safe location where they will not be contaminated, misshapen, or exposed to elements that could affect the operation of the respirator. Attachment 9 provides an overview of steps taken to perform this activity.

Emergency respirators must be accessible in the work area and stored in compartments or covers that are clearly marked as containing emergency respirators. [16] R/P

4.8 MEDICAL SURVEILLANCE

Medical surveillance must be provided for all personnel who use respiratory protection, including disposable units such as dust masks. A medical evaluation must be provided to each employee prior to fit testing. Only employees who receive an annual approval from the Employee Wellness Center are permitted to wear a respirator. Medical clearance must be obtained prior to a respirator fit test.

As a precautionary measure, following respirator use in an emergency situation, the affected employees must notify the Safety Administrator to determine whether or not a medical evaluation is required. Attachment 4 identifies atmosphere-supplying respirators used by Con Edison. [12] R/P

The Employee Wellness Center must specify the elements of the medical evaluation and must provide documentation to the Operating Organization stating that an employee is medically qualified to use respiratory protection. This medical evaluation will be performed using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire.

In order to focus the medical evaluation, the physician must be aware of conditions under which the respirator will be worn and the tasks that the individual may perform while wearing the mask (e.g., the extent of use, the degree of exertion the wearer will encounter, and the characteristics of the respirator that he or she will be wearing). This information is important because most respirators increase physical stress on the body, particularly the heart and lungs. If the employee will wear a negative-pressure respirator, and the Employee Wellness Center finds a medical condition that may place the employee's health at increased risk if the respirator is used, the employer must provide a PAPR if the medical evaluation finds that the employee can use this respirator.

Records must be maintained of these examinations and of the physician's approval/non-approval for the individual to wear the respirator. After the initial medical examination and the training, respirator wearers must be reevaluated annually. [17] R/P

4.9 TRAINING

This program requires that personnel receive respiratory protection training addressing the requirements of this CEHSP prior to being assigned to work with respirators, and that they receive annual refresher training and an annual fit test. Individuals must be given the opportunity to try on and become familiar with one of an assortment of approved half and full facepiece negative-pressure respirators. These individuals must pass a quantitative or qualitative fit test administered according to OSHA regulations. Attachment 10 presents an outline of the training.

Annual training is required for personnel who may use supplied air respirators (SARs) or Self-Contained Breathing Apparatus (SCBAs). Additionally, proper use of SARs or SCBAs must be covered as part of the job briefing prior to each use during normal work operations or other non-emergency response activities.

- Quarterly 'hands-on' training must be conducted for personnel who use SARs in emergency response situations (i.e., situations occurring without prior notice where immediate response is necessary). Actual use during work activities or emergency response constitutes training with respect to the quarterly requirement for emergency responders for that quarterly period.

- Additionally, the annual training class constitutes training to meet the quarterly requirement (i.e., where annual training is kept current, an individual assigned emergency response duties complete one annual and three quarterly refreshers each year).

- The local Program Administrator must maintain records of training. All training must be entered into the TLC Registration System. Completed quarterly training must be indicated as "Pass"; for employees meeting the quarterly training requirement through actual use as indicated above, the grade must be indicated as "Completed" and a comment added in the Comment section to that effect. Quarterly training is not required for employees who use SCBA respirators during normal work operations or other non-emergency response activities and no documentation is required in the TLC Registration System.

4.10 PROGRAM EFFECTIVENESS EVALUATION

Program Administrators must regularly consult employees required to use respirators. Any concerns and problems identified must be addressed and corrected.

The Respiratory Protection Program Administrator must document, maintain the results of an annual program review, and must identify, based on the results of the review, changes to the site specific program. Conduct of this review entails consultation with employees to assess their perceptions of the program, and identifying any potential problems, including:

- Respirator fit.
- Appropriate respirator selection for hazards.
- Proper respirator use under workplace conditions encountered by employees.
- Proper respirator maintenance.

Program review findings must be documented and maintained, and must identify all program observations, the date of the review, and name of the person performing the review. After the review, the Program Administrator will evaluate the findings and work with EH&S to revise the written site specific program as needed. [19] R/P

Attachment 12 presents an example of questions that may be used to collect information from employees for consideration in the annual review.

The Annual Program Review is documented using the form presented in Attachment 13. The completed form that shall be submitted to EH&S – Industrial Hygiene by February 15th for the preceeding year.

4.11 RECORDKEEPING

Based on the elements identified above, the Respiratory Protection Program Administrator at each operating organization must maintain the following records:

- Local Respiratory Protection Program
- Hazard assessments (in accordance with CEHSP S05.01, *Hazard Assessment and Personal Protective Equipment*)
- Employee training records (retained for three years)
- Fit testing records (see note below)
- Medical surveillance records (retained by Employee Wellness Center for duration of employment plus 30 years)
- Respirator and fit-test equipment testing, maintenance and repair records (retained for three years)

- Program Effectiveness evaluations

- Vendor documentation of breathing air quality.

Note: It is the responsibility of each operating organization's Respiratory Protection Program Administrator or a designated alternate to arrange for or performs quantitative and qualitative fit testing. Fit test records shall be entered into the SHIMS Safety and Health Information System by one of the following methods: (1) electronically by using TSI's FitPlus Software or OHD's Quantifit FitTrack Software and importing the records to SHIMS or (2) using the "Respirator Fit Test Form (Attachment 6A/B) and transferring the fit test results manually from the form into the Respirator Fit Test module of SHIMS. The Respirator Fit Test form can be discarded after the data is entered into SHIMS.

For additional information see:

- Instructions for Conducting a Respirator Fit-Test using TSI Fit Plus for Windows Software
- Guide to Respirator Fit-Test Module. [20] R/P

5.0 DEFINITIONS

Air-Purifying Respirator (APR): A device used to protect the wearer from inhalation of harmful airborne contaminants through the use of filters or sorbents that remove harmful substances from the air breathed.

American Conference of Governmental Industrial Hygienists: A consensus group that prepares advisory exposure limits, the Threshold Limit Values (TLVs).

Assigned Protection Factor (APF): The level of respiratory protection expected from a respirator that is functioning properly, has been properly fitted, and is worn by a worker trained in its use.

Atmosphere-Supplying Respirator: A device used to protect the wearer from inhalation of harmful airborne contaminants by providing a supply of breathable air from a clean source outside of the contaminated work area.

Company Exposure Guidelines (CEG): Exposure guidelines developed by Con Edison.

Contaminant: Airborne material that is harmful or irritating, or that is a nuisance material in concentrations that may affect employee health.

Disinfect: Destroy pathogenic organisms by means of chemicals, for example, detergents or sterilants.

Dust: Solid particles that are mechanically produced and that range in size from microscopic to macroscopic.

End-of-Service-Life Indicator (ESLI): A system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Escape Cylinder: A short-duration, self-contained air supply that allows a person to exit an area with a hazardous atmosphere when the primary air supply is interrupted.

Exposure Assessment: A systematic hazard assessment performed to identify exposure hazards and the appropriate respiratory protection for specific work operations. To evaluate the potential for respiratory hazards, this assessment includes a review of the work activities, equipment, and materials used, and end products and by-products.

Fumes: Solid particles generated by condensation of metals from the gaseous state, for example, as that which occurs during welding, and having a particle size less than 1 micrometer in diameter.

Gases: Substances that are gaseous at ordinary temperature and pressures.

Grade D Breathing Air: Air that meets the requirements established by the Compressed Gas Association and identified in the OSHA Respirator Standard (29 CFR 1910.134).

Immediately Dangerous to Life or Health (IDLH): 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 a dangerous atmosphere. Examples of an IDLH condition include an oxygen deficient atmosphere, an atmosphere at or above the NIOSH IDLH value, or an atmosphere where a person's ability to escape is impaired, such as an uncontrolled steam release. These conditions may exist during a fire or equipment failure which results in the continuous release of smoke where the area to be entered becomes filled with smoke; or in an atmosphere containing a toxic material where the concentration cannot be reasonably estimated.

Mists: Suspended liquid droplets generated by condensation or by breaking up of a liquid with a size ranging from submicroscopic to macroscopic.

National Institute for Occupational Safety and Health (NIOSH): A division of the United States Public Health Service which advises OSHA on standards and prepares the Recommended Exposure Limits (RELs) to identify acceptable concentrations of contaminants.

NIOSH-Approved: Respiratory protection that has been tested and approved by NIOSH.

Nuclide: A type of atom characterized by its mass number, atomic number, and energy state of the nucleus, provided that the mean life in that state is long enough to be observable.

Occupational Safety and Health Administration (OSHA): The federal regulatory agency responsible for protecting workers and preparing the standard addressing the use of respirators in the workplace. OSHA also promulgates Permissible Exposure Limits (PEL) which identify the concentrations at which exposures to chemicals are hazardous.

Oxygen-Deficient Atmosphere: An atmosphere containing less than 19.5% oxygen by volume at sea level.

Particulates: A suspension of fine solid or liquid particles or fibers in air, such as asbestos dust, fog, fume, mist, smoke, or sprays.

Powered Air-Purifying Respirator (PAPR): An air-purifying respirator that uses a power source (usually a battery) to operate a blower that passes air across the air-cleansing element to supply purified air to a respiratory inlet (mouth and nose) covering.

Qualified Person: A person who, based on a minimum of a 1-day formal training course in respiratory protection and hands-on experience in qualitative/quantitative fit testing techniques, is qualified to conduct respiratory training and perform qualitative/quantitative fit testing. The qualified person's training must be approved by the Manager of Safety and Industrial Hygiene in EH&S.

Radionuclides: A radioactive ***nuclide*** that has the capability of spontaneously emitting radiation.

Respirators/Respiratory Protective Equipment: Approved equipment worn to protect the respiratory system and to prevent the inhalation of airborne stressors in the work area. Respirators include both disposable and non-disposable air-purifying and supplied-air face pieces and apparatus.

Vapor: The gaseous forms of substances which are normally in the solid or liquid state at room temperature and pressure.

6.0 RESPONSIBILITIES

Employees: Con Edison personnel who are identified to wear respiratory protection because of the hazards presented by a task must:

- Comply with all aspects of the Respiratory Protection Program.
- Use the respiratory protection in accordance with the instructions and training received.
- Guard against damage to the respirator.
- Inspect the respirator before and after use, and immediately report any defects or damage to his or her supervisor.
- Carry and produce upon request the Employee Respiratory Protection Certification Card. See Attachment 11. (Note that some circumstances may warrant the card being maintained in a central location, i.e., supervisor's office.)
- Provide information on the program effectiveness and on any problems associated with respirator use.

Employees who refuse to cooperate with the requirements of the respiratory protection program will be subject to disciplinary action by their respective organization.

Environment, Health, and Safety (EH&S)- Industrial Hygiene::

- Reviews applicable regulations and ensures that procedures meet all regulatory requirements.
- Revises procedures as applicable.
- Reviews/approves controlled documents prior to release.
- Distributes updates and changes.
- Reviews training prepared by the Learning Center.

- Provides technical assistance to Safety Administrators.
- Controls, administers, and updates the written Corporate Respiratory Protection Program.
- Provides local Respiratory Program Administrators with the guidance and assistance necessary to develop and maintain their programs.
- Evaluates operations to identify the exposures to stressors and the appropriate respiratory protection.
- Reviews and approves all new respiratory protection programs at all company locations.
- Approves changes in respirator use or addition/deletions of respiratory requirements for approved programs at all company locations.
- Approves qualified individuals to train fit testing personnel.
- Selects and provides final approval for all respiratory protection devices, including respirators, cartridges, and filters. Only those respirators approved by EH&S are permitted for use in the Con Edison system.
- Selects and approves all materials associated with respirator cleaning and disinfection.
- Conducts, or assigns a person to conduct, ambient air monitoring on a periodic basis to determine employee exposure levels. The results will identify areas requiring contaminant control through the use of engineering, administrative or respiratory protection controls.
- Ensures exposure-monitoring records are entered into the SHIMS Safety and Health Information Management System.
- Provides assist visits to organizations participating in the respiratory protection program to ensure program compliance, and the accuracy and completeness of training and fit testing records.
- Approves forms required to document employee fit testing and proof of employee respiratory protection certification.
- Identifies and approves methods of recordkeeping for maintaining fit testing forms.

Site Specific Manager Responsible for Compliance: The Con Edison designated individual(s) within each operating organization and/or site who is responsible for ensuring compliance with federal, state, and local regulations, and this procedure.

Law Department: The Law Department assists and provides guidance to EH&S by reviewing changes to these procedures in light of all applicable statutes and regulations to ensure that the procedures meet all legal requirements.

Employee Wellness Center: The Employee Wellness Center provides initial and annual evaluations for employees to confirm that they are medically qualified to wear respiratory protection. Employees will not be provided with respirators or assigned to tasks requiring respiratory protection unless they have received approval from the Employee Wellness Center to wear a respirator. Medical clearance is required prior to personnel receiving a respirator fit test.

Operating Organizations: Unless otherwise indicated, operating organizations are responsible for compliance with federal, state, and local regulations, and this procedure.

In addition, each organization requiring employees to wear respiratory protection must designate a Respiratory Protection Program Administrator. The site-specific Respiratory Protection Program Administrator will develop a Site Specific Respiratory Protection Program (SSRPP) which includes procedures specific to each operation, includes all items listed in Attachment 1, and is consistent with the procedures outlined in this CEHSP. This procedure must be submitted to Safety & Industrial Hygiene for approval. Any subsequent procedural changes to the SSRP must also be submitted to Safety & Industrial Hygiene for approval.

Respiratory Protection Program Administrator or a designated alternate:

- Identify those employees that require medical surveillance, respiratory training, and fit testing.
- Ensure that employees requiring respiratory protection receive medial clearance, training, and fit testing annually. The course number must be entered into the TLC Registration System.
- Ensure that every employee required to wear a respirator is allowed to pick the most comfortable respirator that provides a proper fit and is appropriate for the work being performed from those approved by EH&S.
- Ensure that employee medical approval to use respiratory protection is current, and that Employee Respiratory Certification Cards are issued upon successful completion of fit testing, and are updated.
- Ensure that all respirator fit test results are entered into SHIMS.
- Evaluate the program effectiveness.
- Ensure that all necessary forms are available when performing fit testing, and obtain forms from Facilities - Reprographics using the "Form No." at the bottom right hand corner of the form or card.

7.0 REFERENCES

4.0 COMPLIANCE REQUIREMENTS

[1] 29 CFR 1910.134(c)(1) (requirement for written respiratory protection program with site-specific procedures, including minimum elements of program).

4.1 EXPOSURE ASSESSMENTS

[2] 29 CFR 1910.134(d)(1)(iii) (requiring employer to identify and evaluate respiratory hazards in the workplace). NOTE: The CEHSP includes Con Edison-specific procedures allocating responsibility for exposure assessment between Industrial Hygiene and local EH&S.

4.2 RESPIRATOR SELECTION AND CLASSIFICATION

[3] 29 CFR 1910.134(d) (respirator selection generally, including requirement that respirator be NIOSH-certified).

4.3 AIR-PURIFYING RESPIRATOR

[4] 29 CFR 1910.134(d) (respirator selection generally); 1910.134(j) (identification of filters, cartridges and canisters). 42 CFR Part 84, subpart K, Non-Powered Air-Purifying Particulate Respirators; subpart L, Chemical Cartridge Respirators (including reference to color coding and marking requirements). NOTE: The CEHSP includes general criteria for selecting the correct respirators, filters and cartridges.

4.4 ATMOSPHERE-SUPPLYING RESPIRATORS

[5] 29 CFR 1910.134(i) (breathing air quality and use, including recordkeeping requirements).

[6] 29 CFR 1910.134(d)(2) (respirators for IDLH atmospheres); 1910.134(g)(3) (procedures for IDLH atmospheres). NOTE: Con Edison has developed the specific procedures in this section to ensure the safety of employees in IDLH atmospheres.

[7] 49 CFR 180.205 (general requirements for requalification of specification cylinders, including prohibition against refilling cylinders after authorized service life has expired); 180.207 (requirements for requalification of UN pressure receptacles, including composite cylinders; incorporates ISO 11623, Transportable Gas Cylinders: Periodic Inspection and Testing of Composite Gas Cylinders, by reference); 180.209 (requirements for requalification of specification cylinders). NOTE: Because Con Edison has several types of composite cylinders in use, it mandates the shortest period for requalification (3 years).

[8] 29 CFR 1910.134(d) (respirator selection generally, including provision requiring employer to select NIOSH-certified respirator and to use it in compliance with conditions of certification); 1910.134(h)(3) (inspection). 42 CFR Part 84, subpart J, Table 1, Air Supplying Line Requirements and Tests (includes maximum hose length). NOTE: The OSHA regulations require respirators used in routine situations to be inspected before each use and during cleaning and require respirators used in emergency situations to be inspected at least monthly and to be checked for proper function before and after each use. Emergency escape-only respirators also must be inspected before being carried to the workplace for use. Con Edison requires inspections as outlined in this CEHSP as a matter of policy to ensure that all respirators are fit for use and that the OSHA inspection requirements are met. The manufacturer requires annual maintenance inspections as specified in the CEHSP. Con Edison requires all airline respirators used in IDLH situations to be equipped with an escape bottle as a matter of policy.

[9] 29 CFR 1910.134(k) (training). NOTE: The OSHA regulations do not expressly require quarterly training. Con Edison requires such training as a matter of policy to ensure personnel using respirators in emergency situations remain adequately trained.

[10] See Note 7 above concerning DOT cylinder requirements. See also 49 CFR 180.213 (requalification markings); 29 CFR 1910.134(h)(1) (respirator cleaning and disinfecting); 1910.134(h)(2) (storage).

[11] 29 CFR 1910.134(h)(3) (inspection, including documentation requirements for respirators maintained for emergency use); 1910.134(h)(4) (requiring respirators that fail inspections to be removed from use). NOTE: See Note 8 above for discussion of inspection requirements.

[12] See Note 9 above regarding training.

4.5 RESPIRATOR USE, INCLUDING FIT TESTING

[13] 29 CFR 1910.134(f) (fit testing); 1910.134(g)(1) (prohibiting facial hair and other conditions that interfere with facepiece seal or valve function); 1910.134, Appendix A, Fit Testing Procedures (Mandatory).

[14] 29 CFR 1910.134(g) (respirator use); 1910.134, Appendix B-1, User Seal Check Procedures (Mandatory). NOTE: This section includes various procedures intended to ensure the safe use of different types of respirators.

4.6 RESPIRATOR INSPECTION PROCEDURES

[15] 29 CFR 1910.134(h)(3) (inspection procedures); 1910.134(h)(4) (requiring removal of defective respirators from service). See Note 8 above for a further discussion of inspections.

4.7 RESPIRATOR MAINTENANCE, CLEANING AND STORAGE

[16] 29 CFR 1910.134(h)(1)-(2), (4) (respirator maintenance, cleaning and storage, including requirement that repairs and adjustments be made only be properly trained individual); 1910.134, Appendix B-2, Respirator Cleaning Procedure (Mandatory). NOTE: This section and the accompanying Appendices include various Con Edison-specific procedures relating to respirator maintenance, cleaning and storage (e.g., use of towelettes between employees being fit tested) developed to meet the OSHA requirements.

4.8 MEDICAL SURVEILLANCE

[17] 29 CFR 1910.134(e) (medical evaluation); 1910.134, Appendix C, OSHA Respirator Medical Evaluation Questionnaire (Mandatory). NOTE: The OSHA regulations do not require respirator wearers to be reevaluated annually; Con Edison requires such reevaluations as a matter of policy to ensure employees wearing respirators are medically fit to do so.

4.9 TRAINING

[18] 29 CFR 1910.134(k) (training and information).

4.10 PROGRAM EFFECTIVENESS EVALUATION

[19] 29 CFR 1910.134(c)(1) (requiring respiratory protection program to be updated as necessary to reflect changes in workplace conditions that affect respirator use); 1910.134(l) (program evaluation). NOTE: The OSHA regulations do not require that program reviews be documented. Con Edison requires such documentation as a matter of policy to provide evidence that the required evaluations have been completed.

4.11 RECORDKEEPING

[20] 29 CFR 1910.134(h)(3)(iv) (documentation requirements for inspections of respirators maintained for emergency use. This information shall be maintained until replaced following a subsequent certification.). NOTE: The OSHA standard only requires written documentation of inspections performed on respirators maintained for emergency use. Con Edison requires retention of inspection records for all types of respirators as a matter of policy. 29 CFR 1910.134(i)(4) (requiring employers to have a certificate of analysis from the supplier that cylinders of purchased air meets Grade D breathing air standards); 1910.134(m) (recordkeeping generally, including records relating to medical evaluation, fit testing, and written respirator program). NOTE: The OSHA regulations require fit test records to be retained until the next fit test is administered. Con Edison uses SHIMS to satisfy its record retention requirements with respect to fit testing. NOTE: The OSHA respiratory protection standard does not require documentation of respirator training; moreover, the training provisions of the general PPE standard, which include a documentation requirement, do not apply to the respiratory protection standard. See 29 CFR 1910.132(g). As a matter of policy Con Edison retains respiratory protection training records for three years consistent with its approach to PPE training records generally.

REVISION HISTORY

Revision Date	Revision #	Summary of Change	Author
02/11/2014	22	Added the Scott Airpak Model 4.5 SCBA to **Attachment 4 – Approved Atmosphere-Supplying Respirators** and corrected the 4th column to make it fit the page.	M. Dumay
4/24/2014	23	Deleted "The qualified vendor supplying the compressed air must provide documentation that the air meets the requirements for Grade D breathing air; these records must be maintained by the local Respiratory Protection Program Administrator" Added " All air supply bottles must be certified by the ChemLab or the breathing air provider.	M. Dumay
09/24/2014	24	Updated the Class & Stock Numbers for the Advantage 200 Respirator and Advantage 200 Fit Test Probed Respirator for Fit Testing in Attachment 3. The numbers did not match what is currently in the iProcurement system. Added "N95 respirator" to the remarks for disposable respirator in Attachment 3.	S. Ng
12/30/2014	25	Periodic review completed with the following changes: • Added Quantitative Fit Testing protocol for Quantifit REDON. • Added Attachment 6B for Quantitative Fit Testing Record. • Updated Attachment 4 to include Scott respirators under SCBA.	S. Mahoney
01/15/2015	26	Removed Class/Stock # for MSA Ultratwin Self-Containing Breathing Apparatus (SCBA) for **Attachment 4 Approved Atmosphere –Supplying Respirators**.	S. Ng
09/30/2015	27	Removed all references to irritant smoke test protocol and replaced with Bitrex Solution Qualitative Fit Testing Protocol from 1910.134 Appendix A.	S. Mahoney
08/26/2016	28	Removed the statement "More than one day's beard growth." from the facial hair policy to clarify that an employee shall be clean shaven prior to wearing a tight fitting respirator. Removed SSN requirement from Fit Testing forms (Attachment 6A and 6B) Updated Attachment 2 General Guidance of	S. Ng

		Respirators Use with clarifications on specific respirator type and cartridges. Updated Attachment 3 and 4 with updated class and stock #s of existing respirators and new items. Updated Attachment 8 with updated Class and Stock #s and additions to the fit test kits.	
02/12/2017	29	Clarified in Recordkeeping and Inspection sections that monthly inspection forms for emergency use respirators should be retained until the annual inspection/certification is completed and the unit is retagged. This is based on OSHA 1910.134(h)(3)(iv)(B)	S. Ng
3/23/2017	30	Update the Training attachment 10 to reflect current fit testing practices. Remove Irritant Smoke test and replace with Bitrex test. Updated Attachment 2 to include respirator guidance for misting or spraying of waste material specifically for Environmental Operations. Updated Attachment 3 with updated class in stock and non catalog request numbers for respiratory protection items. Removed references to Corporate EH&S and updated the terms to EH&S – Industrial Hygiene	S. Ng
7/25/2017	31	Remove reference to Airline Only for PCB (Hot Work tasks) on Attachment 2 PCB. Added MSA low profile P-100 cartridge to Attachment 3 Removed reference to MSA Comfo respirator in Attachment 3 Change Occupational Health Department to Employee Wellness Center Clarified site specific and operating organizations responsible for developing and maintaining Site Specific Respiratory Protection Plans (SSRPP) Remove references to “facility” throughout the procedure due to the nature of Con Edison’s workforce. Added fit test certification card to Attachment 11	S. Ng P. Kothari G. Slintak

		Update language in Section 4.4.3 and 4.4.4 air cylinder hydrostatic testing frequencies shall be completed in accordance to the cylinder's specification. Added clarification to "document" program effectiveness evaluation to Section 4.10 and 4.11 Added Attachment 12 – Program Effectiveness Evaluation example form Added Attachment 13 – SSRPP Annual Program Review Summary form Gramatical edits made throughout the document Consolidated respiratory protection training requirements to reduce redundant information	
10/10/2017	32	Updated note in section 4.11 that operating organization's Respiratory Protection Program Administrator or a designated alternate are responsible for documenting fit testing records into SHIMS. Changed terminologies "Graphic Arts" to "Facilities – Reprographics" and "GA No." to "Form No."	S. Ng

ATTACHMENT 1
MINIMUM REQUIREMENTS FOR A SITE RESPIRATOR PROGRAM

Whenever the employer requires respirators, the employer must establish and implement a written respiratory protection program with worksite-specific procedures. The program must be updated as necessary to reflect those changes in workplace conditions that affect respirator use. The employer must include in the program the following provisions of this section, as applicable:

1. Procedures for selecting respirators for use in the workplace;

2. Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations, including filter change requirements or schedules;

3. Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators;

4. Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators.

5. Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations;

6. Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance, and;

ATTACHMENT 2
CHOOSING THE RIGHT RESPIRATOR FOR THE JOB*

ACTIVITY	RESPIRATOR (CODE)	CHOICES (TYPES)
Ordinary Welding or Burning (no paint involved)	R1H or R2H, or R3H, or R4	Metal Fume (Disposable), Half or Full Facepiece with P100 Filter, Powered Air Purifying Respirator
Mercury Cleanup	R2G or R3G	Half or Full Facepiece with Mercury Cartridge
Paint Spraying (In Booth)	R5	Continuous Flow or Pressure-Demand Airline
Paint Spraying (Not in Booth)	R3J	Full Facepiece with Organic Vapor Cartridge
Pesticide Application	R2I or R3I	Half or Full Facepiece with Pesticide Cartridge
Main Cutouts (Gas Release)	R7 or R6	Pressure-Demand Airline with Escape or SCBA
Fly Ash in Boiler	R2A or R3A	Half or Full Facepiece with P100 Filter
Grinding	R2A or R3A	Half or Full Facepiece with P100 Filter
Leaded Paint	Consult CEHSP S10.00	See Section on Respiratory Protection
Asbestos	Consult Asbestos Management Manual	See Section on Respiratory Protection
Brazing*	R3D	Full Facepiece with Acid Gas/Organic Vapor/P100 *Welding Adapter Required
Abrasive Sandblasting	R5	Airline with Abrasive Blasting Hood
Handling Used Brake Drums and Used Brake Parts	Consult Asbestos Management Manual	See Section on Respiratory Protection
Clutch Jobs	Consult Asbestos Management Manual	See Section on Respiratory Protection
Use of Solvents	R2B or R3B	Half or Full Facepiece with Organic Vapor Cartridge
Housekeeping Involving Construction and Power Plant Debris	R1 or R2A	Half or Full Facepiece with P100 Filter
PCB (Cold Work)	R2D or R3D	Half or Full Facepiece with Acid Gas/Organic Vapor/P100 Filter
PCB (Hot Work)	R7 or R6	Airline with Escape or SCBA
Install and Remove Non-Asbestos Insulation	Consult Asbestos Management Manual	See Section on PPE
Lead Work in Manholes	See CEHSP S10.00	See Section on Protection
Pigeon Debris	R1 or R2A	Half Facepiece with P100 Filter
Misting or spraying of waste material	R1 or R2A	Half Facepiece with P100 Filter

RESPIRATOR CODE AND TYPE

R1	Disposable
R2	Half Face
R3	Full Face
R4	PAPR (Full Face)
R5	Airline
R6	SCBA
R7	Airline with Escape

FILTER OR CARTRIDGE

A	P100
B	Organic Vapors
C	Acid Gas/Organic Vapor
D	Acid Gas/Organic Vapor/P100
E	Ammonia/Methylamine
F	Radionuclide/P100
G	Mercury
H	Metal Fume (P-100)
I	Pesticides
J	Paints/Lacquers/Enamels

* Attachment 2 is a general guidance only; respirator selection must be based on actual or reasonably estimated exposure.

ATTACHMENT 3
CLASS & STOCK NUMBERS FOR AIR-PURIFYING RESPIRATORS AND FILTER CARTRIDGES APPROVED BY CON EDISON

RESPIRATORS	MSA		3M	Moldex	REMARKS
	Advantage 200 / 4000	Ultratwin			
Disposable Half Face (one size)	N/A	N/A	3M 8214 (N95) 689-1241 3M 8239 (P100) MSC Punchout Catalog #01563303	Moldex 2310 (N99) MSC Punchout Catalog #00326348	Fit Testing and Training Required for Disposable Respirators***Single-banded disposable APRs are not approved, and their use is prohibited.***
Half Face	Small 689-3580 Medium 689-3598 Large 689-3606	Small 680-6897 Medium 680-6905 Large 680-7085	3M 6500 Quick Latch MSC Punchout Catalog Small 68956846 Medium 68956853 Large 33860602	N/A	Protects up to 10X the Permissible Exposure Limit (PEL) Fit Testing Required Training Required
Full Face	Small 689-4802 Medium 689-4844 Large 689-4851	Small N/A Medium 689-0096 Large 689-0097	None	N/A	Protects up to 50X the PEL Fit Testing Required Training Required
Powered Air-Purifying Respirators (PAPR)	MSA Optimair MM2K w/ Adv 4000 facepiece & Optilter XL cartridge Small NS0244878 Medium NS0244879 Large NS0244880	N/A	3M Speedglas Welding & Safety Helmet 9100 MP with 3M Adflo PAPR – See your local EH&S representative	N/A	Fit Testing with MSA Full Face Air-Purifying Respirator to Determine Correct Size. 3M Speedglas only approved for welding applications Training Required, Protects up to 50X PEL. See Specific Standards for exceptions.
Probed Respirators for Fit Testing	MSA Adv. 200 Small 689-3671 Medium 689-3689 Large 689-3697 MSA Adv. 4000 Kit Small 689-4794 Medium 689-4828 Large 689-4836	N/A	3M 6500 3M Quantitative Fit Test Adaptor 601 – See your local EH&S representative	N/A	Advantage 4000 kit comes with RD40 adapter and fit testing adapter
CARTRIDGES	**MSA Advantage 200 / 4000**	**MSA Comfo / Ultratwin**	**3M**	**Moldex**	**REMARKS**
Dusts, Mists, Fumes Radionuclides Asbestos P100	689-3648 MSC Punchout Catalog MSA Low Profile - 03849635	689-3804	MSC Punchout Catalog 3M 2097 - 00325696 3M 2297 – 59335950	N/A	
Organic Vapors Paints Lacquers Enamel/Mists, P100	689-3655	689-3804	MSC Punchout Catalog 3M 60928 – 71855266	N/A	
Organic Vapors Acid Gases, P100	689-3655	689-3804	MSC Punchout Catalog 3M 60928 - 71855266	N/A	
Organic Vapors Acid Gases P100	689-3655	689-3804	N/A	N/A	
Pesticides	N/A	N/A	N/A	N/A	
Ammonia/ Methylamine	689-3663	N/A	MSC Punchout Catalog 3M 60926 – 71855282	N/A	

Mercury	689-3754	N/A	MSC Punchout Catalog 3M 60929S – 53781209	N/A	Limited Approval for Cleanup of Mercury Spills

ATTACHMENT 4
APPROVED ATMOSPHERE-SUPPLYING RESPIRATORS

RESPIRATORS	MSA	CLEMCO	SCOTT	REMARKS
Pressure-Demand Airline Continuous Flow Airline Combination Airline/ Negative Pressure Pressure-Demand Airline with HEPA Disconnect	Not Class/Stock Item	N/A	N/A	Fit testing required with Air-Purifying MSA full facepiece to determine appropriate size. Training required annually. Inspection before and after use required. Monthly (i.e., every 30/31 days) inspection required. Cleaning required after use. Not for use in Oxygen-Deficient (less than 19.5% oxygen) or IDLH* Atmospheres.
Pressure-Demand Airline with Escape	MSA Premaire Airline Respirator with Escape Bottle NS0247248 (S) NS0247249 (M) NS0247250 (L)	N/A	N/A	Fit testing required with Air-Purifying MSA full facepiece to determine appropriate size. Annual training required for all users. Quarterly "refamiliarization" training (donning equipment) required for emergency use. Inspection before and after use and monthly (i.e., every 30/31 days) inspection required. Cleaning required after use. Can be used in Oxygen-Deficient (less than 19.5% oxygen) or IDLH* atmospheres. Bottle for escape only.
Self-Contained Breathing Apparatus (SCBA) Combination SCBA/ Airline Combination SCBA/ Airline With Escape	MSA Airhawk II Air System, Firehawk (PTC)	N/A	Airpak Model 75 (4.5) and X3* with AV2000/3000 Facepiece*	Fit testing required with Air-Purifying full facepiece to determine appropriate size. Annual training required for all users. Quarterly "refamiliarization" training (donning equipment) required for emergency use. Inspection before and after use and monthly (i.e., every 30/31 days) inspection required. Cleaning required after use. Can be used in Oxygen-Deficient (less than 19.5% oxygen) or IDLH* atmospheres. Bottle for escape only. Approved for use only by Con Edison Chemical Biological Weapons Response Team (CECBWRT) and SSO Industrial Fire Brigade.
Supplied-Air Respirator	Not Class/Stock Item	Apollo 600 HP	N/A	Type CE, continuous-flow supplied –air respirator for abrasive blasting to be used with respirable compressed air source Please contact Industrial Hygiene if needed.

* IDLH - Immediately Dangerous to Life or Health

ATTACHMENT 5
RESPIRATOR DONNING/DOFFING AND FIT TESTING PROCEDURES

The initial fit test must be performed when an employee is assigned to a task that requires the wearing of respiratory protection. An annual test must be performed to confirm the fit. In addition, a fit test must be required when an employee:

- Has a change in facial structure, for example scars, hollow temples, facial creases, and loss of teeth.
- Experiences a weight gain or loss of more than 20 pounds.

An employee must not be fit tested when any of the following reasons exist:

- Beards of any kind.
- Mustaches that extend beyond the lip line.
- Long sideburns.
- A cut or bleeding face within the respirator facepiece.
- Punctured eardrum.
- Failure of physical exam.

Personnel must have a current report of fitness from the Employee Wellness Center prior to receiving a fit test.

Donning the Respirator

The process of donning the respirator begins with the employee inspecting the mask. During the inspection the employee must check the tightness of connections and the condition of the facepiece, headbands, valves, and gaskets. Rubber or elastomer parts must also be inspected for shape, pliability, and signs of deterioration. Any defective parts must be replaced with appropriate parts from the same manufacturer.

Following the correct procedures helps to ensure that the employee obtains the desired contact between the mask and the sealing surface on the face.

The procedure involved in donning a respirator facepiece includes:

- Selecting a properly sized, clean, sanitized facepiece and, if appropriate, breathing hose.
- Attaching the cartridges and canister specified by the program to the APR facepiece or breathing hose, as appropriate.

The procedures for donning **a full-facepiece** respirator involve:

- Placing all straps forward over the front of the respirator.
- Seating the chin in the chin cup of the face seal.
- Placing the top of the facepiece against the brow.
- Making sure that bangs or long hair are pushed away from the sealing surface and the edge of the respirator.

- Pulling the straps over the head while holding the front of the facepiece against the face.
- Positioning the headbands with the shorter straps (bottom straps) below the ear and adjust. Positioning the longer straps (top straps) above the ears resting on the crown of the head and adjusting. Finally, adjusting the top band.

The procedures for donning **a half-facepiece** respirator involve:

- Fitting the face piece on the nose bridge and adjusting.
- Pulling straps over the head while holding the front of the facepiece against the face.
- Positioning the bottom headband and adjusting.
- Positioning the top headbands and adjusting.

There may be minor differences in the requirements for donning a specific respirator. For example, when fitting the 3M half facepiece respirator, fit the facepiece low on the chin, swing the bottom of the facepiece into contact with the chin, and adjust the cradle suspension.

Doffing the Respirator

Removing the respirator must be performed carefully to avoid having material fall into the face and eyes of the wearer, and to avoid inhalation of the contaminant. When removing the respirator wash the hands or don clean gloves prior to starting the removal process, lean forward, loosen the straps and remove the respirator while holding the mask at the snout or the exhalation valve.

If the wearer cannot ensure clean or uncontaminated hands, or gloves are not available, the respirator will be removed by grasping the snout and pulling the respirator away from and off the face without loosening the straps.

After removing the respirator, place it in a clean area if to be reused or dispose of it according to accepted procedures. When the respirator will be reused after a short time, protect the sealing surface from contact with hazardous materials. If the respirator will not be reused, place the facepiece in a proper container for further cleaning or sanitizing. Always handle the facepiece to ensure that it does not become contaminated and to ensure that it does not become distorted.

Positive/Negative Pressure Test

This test must be performed each time the respirator is donned to ensure the fit. When the test is performed, the manufacturer's fitting instructions must be available to each person to review.

The integrity of this test requires that the individual does not disturb the position of the respirator on the face. Personnel must perform this test carefully to ensure that they do not break the face-to-facepiece seal.

After donning the respirator:

- Check the fit in a mirror or by having a buddy check to make sure that the facepiece is properly aligned.
- Perform the positive pressure check by covering exhalation valve(s) and blowing air out gently. If the respirator has been properly donned a slight positive pressure will build up inside the facepiece.

- Perform the negative pressure check by covering intake to cartridges, canister, or breathing hose with the palm of a hand or a suitable cover (e.g., rubber glove) and inhaling. If the facepiece collapses slightly and no inward leakage detected, the test indicates the respirator was properly donned and there is no leakage.

If during either test a leak of air between the sealing surface of the facepiece and the face is detected, readjust the fit by adjusting the head harness and straps, and repeating the test. If during the repeat test a leak is still detected, obtain another size of facepiece or another brand and perform the fit test.

Fit Testing

Fit testing by respirator wearers must be performed when personnel enter the respiratory protection program and annually thereafter. More frequent fit testing must be provided when a person experiences a change in profile that would affect the fit of the mask (loss or gain of weight, surgery to the jaw of the face).

Respirator fit testing is performed to determine how well a specific type of respirator fits an employee. The test evaluates how well the sealing surface of the respirator contacts the face of the wearer. For this reason, a person undergoing a fit test can not have any facial hair in the area where the respirator seals against the face.

There are three general reasons for performing respirator fit tests:

- To determine whether the face to facepiece seal is adequate.
- To determine which respirator provides the best fit for the employee and/or which is most comfortable.
- To provide the employee an opportunity to wear the respirator in a "test atmosphere", as required by regulations.

To ensure the fit of the respirator, one of two fit tests must be performed. Both of these tests do not need to be performed to evaluate the fit of the respirator. For routine fit testing of half and full face respirators, the quantitative fit test protocol is preferred and must be used. The qualitative fit test protocol using Bitrex must be used for the disposable respirator (N-95). Only in emergency cases or on a case-by-case basis, as determined by EH&S – Industrial Hygiene, may a half face respirator be fit tested using the qualitative protocol. Where a qualitative fit test is performed in an emergency and that employee continues the use of the half face respirator, for whatever reason, a retest using the quantitative protocol must be performed as soon as possible. The following discussion presents in more detail the objective of each test. Additional guidance concerning the fit test procedures can be found in OSHA's General Industry Standards for Respiratory Protection (29 CFR 1910.134, Appendix A), for lead (29 CFR 1910.1025) and asbestos (29 CFR 1910.1001).

Qualitative Fit Test

This test evaluates the fit of the respirator on an employee and involves the employee responding voluntarily or involuntarily to the test chemical. The protocol involves wearing the respirator in a test atmosphere, having the employee perform a series of exercises simulating work movements, and relying on the employee to detect leakage of a contaminant into the facepiece.

The test confirms the quality of the respirator fit. When this test is performed, the fit-test candidate must not have any facial hair that interferes with the surface where the respirator seals against the face.

Bitrex™ (Denatonium Benzoate) Solution Aerosol Qualitative Fit Test Protocol

The Bitrex (Denatonium benzoate) solution aerosol QLFT protocol uses the published saccharin test protocol because that protocol is widely accepted. Bitrex is routinely used as a taste aversion agent in household liquids which children should not be drinking and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

Taste Threshold Screening.

The Bitrex taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of Bitrex.

During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches (30.5 cm) in diameter by 14 inches (35.6 cm) tall. The front portion of the enclosure shall be clear from the respirator and allow free movement of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts # FT 14 and # FT 15 combined, is adequate.

The test enclosure shall have a 3/4 inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his or her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a bitter taste

Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the Threshold Check Solution into the enclosure. This Nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

The Threshold Check Solution is prepared by adding 13.5 milligrams of Bitrex to 100 ml of 5% salt (NaCl) solution in distilled water.

To produce the aerosol, the nebulizer bulb is firmly squeezed so that the bulb collapses completely, and is then released and allowed to fully expand.

An initial ten squeezes are repeated rapidly and then the test subject is asked whether the Bitrex can be tasted. If the test subject reports tasting the bitter taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.

If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.

If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.

The test conductor will take note of the number of squeezes required to solicit a taste response.

If the Bitrex is not tasted after 30 squeezes (step 10), the test subject is unable to taste Bitrex and may not perform the Bitrex fit test.

If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.

The nebulizer shall be thoroughly rinsed in water, shaken to dry, and refilled at least each morning and afternoon or at least every four hours.

Bitrex Solution Aerosol Fit Test Procedure.

The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

The fit test uses the same enclosure as that described in 4. (a) above.

The test subject shall don the enclosure while wearing the respirator selected according to section I. A. of this appendix. The respirator shall be properly adjusted and equipped with any type particulate filter(s).

A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

The fit test solution is prepared by adding 337.5 mg of Bitrex to 200 ml of a 5% salt (NaCl) solution in warm water.

As before, the test subject shall breathe through his or her slightly open mouth with tongue extended, and be instructed to report if he/she tastes the bitter taste of Bitrex.

The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of the fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test.

After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

Every 30 seconds the aerosol concentration shall be replenished using one half the number of squeezes used initially (e.g., 5, 10 or 15).

The test subject shall indicate to the test conductor if at any time during the fit test the taste of Bitrex is detected. If the test subject does not report tasting the Bitrex, the test is passed.

If the taste of Bitrex is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

<u>Quantitative Fit Test</u>

There are two methods available for performing quantitative fit testing: the use of ”Quantifit” or the “Portacount”. The “Quantifit” works on a principle of air leakage and uses ambient air as the challenge agent. The “Portacount” works on a principles of comparing particles inside against particles outside the mask and uses particles in ambient air as the challenge agent. Both quantitative fit test methods are used by Con Edison.

The “Portacount” Quantitative fit testing involves exposing the wearer to a test atmosphere and measuring the penetration of the test agent into the respirator. The following items outline the elements of the quantitative test procedure.

- A probed air-purifying respirator equipped with the appropriate cartridge a sampling port which is constructed so that there is no detectable leak around the port must be used during quantitative fit testing. If available, an adapter that fits onto the facepiece may be used instead of the probed respirator. The respirator is connected by flexible tubing to an instrument which measures the penetration of the test agent into the respirator.
- The test subject will don and adjust the respirator without assistance from any person. The test subject, with the respirator exhaust port blocked, will perform a positive and negative pressure check.
- While wearing the respirator in the test atmosphere, the subject carries out a series of exercises simulating work movements. The Portacount computer interlink exercise parameters must be set up with the following exercises in the order listed:
  - Normal breathing.
  - Deep breathing.
  - Turn head side to side.
  - Move head up and down.
  - Talk.
  - Grimace and frown.
  - Bend over and touch toes.
  - Normal breathing.
- The use of the “Portacount” will indicate a respiratory protection factor for the individual tested. The pass/fail overall fit factor level will be 100 for half face and 1,000 for full face. See Attachment 6A.

RAINBOW PASSAGE

Reading the rainbow passage results in a wide range of facial movements that are useful in determining a proper respirator fit. This is recommended for the “Portacount” talking exercise. The only alternative is counting backwards from 100.

The Rainbow Passage is as follows:

When the sunlight strikes raindrops in the air, the raindrops 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 his reach, his friends say he is looking for the pot of gold at the end of the rainbow.

The “Quantifit” Quantitative Fit Testing method is also known as the controlled negative pressure method. During a fit test, the respirator inlets are capped with test adapters, and the inhalation valves are removed from the mask. With the test subject holding his or her breath for

no more than ten seconds, the Quantifit then establishes and maintains a slight vacuum, or **controlled negative pressure**, inside the mask.

Since the respirator inlets are sealed, all sources of leakage into the mask are through the face-to-facepiece seal. The volume of air drawn out of the mask by the Quantifit during this short period of time is equal to the leak rate into the mask through the face-to-facepiece seal.

The “Quantifit” shall be set up for the REDON protocol. The following steps describe the procedure to follow the Quantitative fit testing “REDON” protocol:

STEP	PROCEDURE
STEP 1: Face Forward	Stand and breathe normally. Face forward while holding breath for measurement.
STEP 2: Bend Over	Bend at the waist, as if going to touch his or her toes. Face parallel to the floor, while holding breath for measurement.
STEP 3: Shake Head	For about three seconds, shake head back and forth vigorously several times while shouting. Stop and face forward while holding breath for measurement
STEP 4: Re-don 1	Remove the respirator mask, loosen all face piece straps, and then re-don the respirator mask. Face forward while holding breath for measurement.
STEP 5: Re-don 2	Remove the respirator mask, loosen all face piece straps, and then re-don the respirator mask. Face forward while holding breath for measurement.

The use of the “Quantifit” will indicate a respiratory protection factor for the individual tested. The pass/fail overall fit factor level will be 100 for half face and 1,000 for full face. See Attachment 6B.

ATTACHMENT 6A
RESPIRATOR FIT TESTING RECORD

EMPLOYEE'S NAME (LAST, FIRST): _____

EMPLOYEE NUMBER: _____

FACILITY NAME (from SHIMS list): _____

DATE OF TRAINING AND FIT TESTING: _____

Medical Clearance:

Has the employee provided written evidence of current medical clearance to wear an APR?

(Circle One) YES (Date of Medical - _____) NO (End Fit Test)

Training:

Has the employee been provided the respiratory protection training indicated by 29 CFR 1910.134, including Use and Limitations of Respirators; Selection; Inspection and Wearing; Con Edison Facial Hair Policy; Maintenance and Storage; Medical Clearance Issues; Filter Changes; and Daily Fit Checks?

(Circle One) YES (Proceed to Fit Checks) NO (End Fit Test)

Fit Check Procedures:	**[Portacount]**		[**BITREX / Portacount Plus N95 Companion**]
	Half Face	Full Face	3M Disposable
a. Negative Pressure Check: Pass/Fail	_____	_____	N/A
b. Positive Pressure Check: Pass/Fail	_____	_____	N/A

Qualitative/Quantitative Fit Test:

Minimum Fit Factors (averaged)	**100**	**1000**	**Pass/Fail / 10**
1. Normal breathing	_____	_____	_____
2. Deep breathing	_____	_____	_____
3. Turn head from side-to-side	_____	_____	_____
4. Nod head up and down	_____	_____	_____
5. Talk	_____	_____	_____
6. Grimace and frown (quantitative only)	_____	_____	N/A
7. Bend over and touch toes	_____	_____	_____
8. Breathe normally	_____	_____	_____

Respirator Approvals:	Manufacturer	Type	Size	Fit Factor
Half-Face	_____	_____	_____	_____
Full-Face	_____	_____	_____	_____
Disposable Dust Mask	[3M N95 Model 8214, one-size-fits-all]	Pass/Fail or Final Portacount Plus N95 Companion Reading		

Employee Approved: **WITH or WITHOUT corrective lenses (Circle One)**

Trainer/Fit Tester: _____ Employee No.: _____
(Print Name)

ATTACHMENT 6B
RESPIRATOR FIT TESTING RECORD

EMPLOYEE'S NAME (LAST, FIRST): _____

EMPLOYEE NUMBER. _____

FACILITY NAME (from SHIMS list): _____

DATE OF TRAINING AND FIT TESTING: _____

Medical Clearance:

Has the employee provided written evidence of current medical clearance to wear an APR?

(Circle One) YES (Date of Medical - _____) NO (End Fit Test)

Training:

Has the employee been provided the respiratory protection training indicated by 29 CFR 1910.134, including Use and Limitations of Respirators; Selection; Inspection and Wearing; Con Edison Facial Hair Policy; Maintenance and Storage; Medical Clearance Issues; Filter Changes; and Daily Fit Checks?

(Circle One) YES (Proceed to Fit Checks) NO (End Fit Test)

Fit Check Procedures: **[Quantifit]**

	Half Face	Full Face
a. Negative Pressure Check: Pass/Fail	_____	_____
b. Positive Pressure Check: Pass/Fail	_____	_____

Quantitative Fit Test (REDON Protocol):

Minimum Fit Factors (averaged)	**100**	**1000**
1. Face Forward	_____	_____
2. Bend Over	_____	_____
3. Shake Head	_____	_____
4. Re-don 1	_____	_____
5. Re-don 2	_____	_____

Respirator Approvals:	Manufacturer	Type	Size	Fit Factor
Half-Face	_____	_____	_____	____
Full-Face	_____	_____	_____	____

Employee Approved: **WITH or WITHOUT corrective lenses (Circle One)**

Trainer/Fit Tester: _____ Employee No.: _____
(Print Name)

ATTACHMENT 7
RESPIRATOR INSPECTION RECORD

INSPECTION DATE _____

NAME (print) _____ EMPLOYEE NO. _____

FACILITY: _____

MANUFACTURER: _____

TYPE SIZE _____

Half Face _____
Full Face _____
PAPR _____
Airline _____ CPR TAG NO. _____ Serial No._____
SCBA _____ CPR TAG NO. _____ Serial No._____
Other _____

		OK	Defective*
a.	Facepiece		
b.	Inhalation Valve		
c.	Exhalation Valve Assembly		
d.	Headbands/Cradle		
e.	Cartridge Holder		
f.	Cartridge/Canister		
g.	Filter		
h.	Harness Assembly		
I.	Hose Assembly		
j.	Speaking Diaphragm		
k.	Gaskets		
l.	Connections		
m.	Cylinder Pressure		
n.	Regulator		
o.	Alarm		
p.	Other Comments/Deficiencies		

* If any part is found to be defective, unit to be removed from service immediately.

INSPECTED BY: _____ EMPLOYEE NO. _____
Signature[1]

[1] In lieu of a hardcopy of the form with an actual signature, an electronic record is an acceptable substitute.

ATTACHMENT 8
CLASS/STOCK NUMBERS FOR RESPIRATOR CLEANING SUPPLIES

ITEM	CLASS/STOCK NUMBER
Respirator Cleaning Kit (Kit includes two-sided bucket, air bulb, liquid cleaner, sponge, drying cloth, and respirator storage bag)	680-7523
Replacement Air Bulb	680-7598
Replacement Liquid Cleaner	680-7549
Powdered Cleaner (Requires warm water. Temperature of water must be between 120 and 140 degrees F.)	634-1689
Respirator Sanitizing Wipes	680-7663
Sponge to clean respirator	680-7531
Respirator Drying Cloth	680-7556
Respirator Storage Bag	680-7564
Fit Testing Adapter Kit	
3M Kit (6000, 7000 series)	686-0365
Refill	686-0399
MSA Kit (Comfo Series half masks, Duo-Twin, Ultra-Twin and Ultra-Elite)	686-0340
Refill	686-0373
MSA Kit (Advantage system)	TSI 8025-30
Refill	TSI 800785
Scott Kit (AV2000/3000)	TSI 8025-20
Refill	TSI 800553

ATTACHMENT 9
RESPIRATOR DISASSEMBLY, CLEANING, DISINFECTING, AND STORAGE

The steps to be followed for cleaning and disinfecting are:

- Respirator Disassembly. Respirators are taken to a clean location where the filters, cartridges, or canisters are removed and discarded. For a thorough cleaning, the inhalation and exhalation valves, speaking diaphragm, and any hoses are removed.

- Cleaning. A cleaning and disinfecting solution approved by the manufacturer is used and is dissolved in warm water in an appropriate tub. Using gloves, the respirator is placed in the tub and swirled gently. A stiff brush may be used.

- Rinsing. The cleaned and disinfected respirators are rinsed thoroughly in water to remove all traces of detergent and disinfectant. This is important for preventing irritation of the skin and dermatitis.

- Drying. The respirators may be allowed to dry in room air while lying on a clean surface. They may also be hand-dried with a clean, lint-free cloth or hung upside down provided care is taken not to damage or distort the facepiece.

- Reassembly and Inspection. The clean, dry facepieces must not be reassembled and inspected in a contaminated area; the area must either be satisfactorily cleaned or an area separate from the disassembly area must be provided to avoid contamination. Inspect the respirators carefully for detergent or soap residue left by inadequate rinsing. This appears most often under the seat of the exhalation valve and can cause valve leakage or sticking.

Respirator Storage

OSHA requires that respirators be stored in a clean, safe place to protect against:

- Dust, sunlight, heat, extreme cold, excessive moisture, damaging chemicals, or mechanical damage.

- Do not store full facepiece respirators with the head harness over the front. Instead, nest the harness inside the facepiece.

Proper respirator storage is required to prevent deformation of the facepiece and exhalation valve.

Respirator Decontamination

The Respiratory Protection Program must take into account methods of preventing contamination of respiratory protective equipment, as well as methods for decontamination.

Respirators must be decontaminated, along with other PPE. During decontamination, the following general procedures apply:

- Clean and disinfect respiratory protection as soon as possible after removing the unit and performing the initial decontamination.

- Do not leave respirators where they may become contaminated.

Use decontamination techniques that minimize the use of strong detergents and any solvents.

NOTE: Individually assigned respirators should be cleaned with a wipe after each use and periodically disassembled and disinfected by the user. During fit testing, towelettes may also be used between employees being tested; however, these respirators must be thoroughly cleaned at the end of each day using the procedure described in the beginning of this Attachment. All other multiple user respirators such as those used in SCBA training/use must be completely disassembled, disinfected and reassembled between each user.

ATTACHMENT 10
RESPIRATORY PROTECTION TRAINING OUTLINE

A. Definitions

B. Responsibilities

1. Industrial Hygiene
2. Organization
3. Employee

C. Employee Medical Clearance

1. Annual

D. Facial Hair Policy

E. Respirator Selection

1. Why the respirator is necessary.
2. How improper fit, usage, or maintenance can compromise the protective effect of the respirator.
3. Air-Purifying
   a) Negative-Pressure Respirators
      - Selection
      - Protection Factors
      - Estimation of Cartridge Service Life
      - Limitations and capabilities
   b) Powered Air-Purifying Respirators (PAPR)
      - Protection Factors
      - Limitations
4. Atmosphere-Supplying
   a) Airline
      - Selection
      - Limitations and capabilities
   b) SCBA
      - Selection
      - Limitations and capabilities
5. How to use the respirator effectively in emergency situations.

F. Fitting of Respirators

1. Problems obtaining a good seal
   a) Facial Hair
   b) Medical Problems

c) Other

2. Methods of Donning
3. Qualified Fit Check
    a. Positive-Pressure Fit Check
    b. Negative-Pressure Fit Check
4. Qualitative Fit Test Procedures
    a. Exercises
    b. Bitrex Test
    c. Taste Test
    d. Odor Test
5. Quantitative Fit Test Procedures
    a. Exercises
    b. Test Environment
6. Wearer Comfort

G. Inspection of Respirators
1. Frequency
2. Procedures on how to inspect a respirator

H. Disassembly, Cleaning, Disinfecting, Maintenance, and Storage
1. Frequency
2. Procedures on how to clean, disinfect, maintain, and store respirator

I. General Requirements of 29 CFR 1910.134.

ATTACHMENT 11
EMPLOYEE RESPIRATORY PROTECTION CERTIFICATION CARD

Employee Respiratory Protection Certification Card			
Name:		Employee No:	
Department:		Work Location:	
Respirator Approvals			
	MFR.	Type	Size
Disp Mask			
Half Face			
Full Face			
Medical Clearance Date:		Corrective Lens *(check one):* ☐With ☐Without	
Annual Training/Fit Test Date:			
Qualified Trainer/ Fit Tester		Employee No:	

ATTACHMENT 12
PROGRAM EFFECTIVENESS EVALUATION FOR EMPLOYEES

1. Are you aware of the Corporate and/or Site-Specific Respiratory Protection Plan?	Yes No
2. Have you received annual training in Respiratory Protection?	Yes No
3. Are you Fit Tested annually for respirators?	Yes No
4. Do you wear an SCBA or Airline respirator?	Yes No
5. Do you wear an air-purifying respirator? (Half or Full-Face and/or disposable respirators)	Yes No
6. Are you trained in the Donning, Maintenance, and Cleaning of your respirator?	Yes No
7. How often do you don your respirator?	Often Infrequent Rarely
8. How often do you perform a user seal check?	Monthly Each use Rarely
9. What type of exposure hazards are you exposed too?	Dust/Fumes/Mist Asbestos/Lead/PCB Acids/Bases Organic Solvents Pesticides Other: All of the above
10. Do you know what respirator to use for what exposure hazard you are exposed to in the work place?	Yes No
11. Do you feel that you are sufficiently trained to identify a hazard and to know what respiratory protection to use? (If answer is NO, provide your reasons	Yes No
12. Have there been any new products/chemicals in your work area that was introduced? If so, have you been trained on how to prevent overexposure?	Yes No
13. Do you know how to obtain a new or replacement respirator and its associated accessories?	Yes No

ATTACHMENT 13
SITE SPECIFIC RESPIRATORY PROTECTION PROGRAM ANNUAL REVIEW SUMMARY

Organization:

Review Year:

Facility/Department:

The completed review summary must be submitted to EH&S – Industrial Hygiene by February 15th for preceding year.

1. Have new products/chemicals or processes with potential to generate airborne contaminants been introduced since last plan review?	Yes No If yes, identify products/chemicals:	Describe and indicate whether Industrial Hygiene assessment was performed
2. Should any existing exposure assessments be updated for operations/activities covered by this plan?	Yes No	Comments:
3. Have new users been trained on the company's Respiratory Protection Plan and site-specific requirements?	Yes No	Comments:
4. Have any users identified training gaps or expressed uncertainty aboutrespiratory protection requirements applicable to this site/operation?	Yes No	Comments:
5. Have users expressed uncertainty or concern about how to obtain new/replacement respirators or accessories?	Yes No	Comments:
6. Have users expressed concern about the quality or suitability of any approved respiratory protection device?	Yes No	Comments:
7. Will the site-specific plan be revised as a result of this review?	Yes No	Comments:

The above information summarizes employee feedback site/operations evaluations performed to complete this for the organization's respiratory protection program for the past year.

Name (RPA): _____ Emp. No._____

Signature: _____ Date:_____