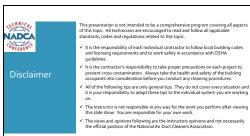
# RESPIRATORY PROTECTION AWARENESS Enhancing Safety in HVAC

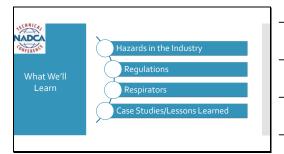


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#### Slide 2





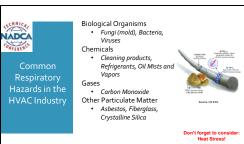


#### Slide 5



An atmosphere is hazardous if it does not  $contain \, \textit{sufficient oxygen,} \, or \, it \, contains \,$ chemical, biological or radiological contam in sufficient quantity to harm the health of employees.

- Potential respiratory hazards:Dust and fibers
- Biological hazards Fumes Mists Gases Vapors

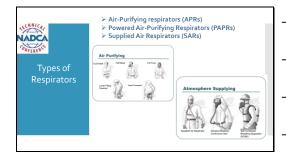


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# Slide 7 NADCA Short Term Health Impacts • Long Term Health Focus on Respiratory Impacts Cough Bronchitis Asthma COPD Cancers • Financial Impacts • Production Impacts Slide 8 Respiratory Protection was #7 of top 10 OSHA violations in 2023, 2481 violations NADCA Inadequate Respirator Selection (exposure monitoring) Lack of fit testing Insufficient Training Poor maintenance Inadequate Program Management Failure to Conduct Regular Respirator Inspections Non-compliance with Medical Evaluations Improper Use of Respirators Failure to Replace Expired Filters and Cartridges Inadequate Recordkeeping OSHA 2024 Fines: \$16,131 per violation (other than serious), \$161,323 per violation (willful or repeat) NADCA Slide 9 When do we use respirators? · When controls are not feasible • While the controls are being installed

 When controls are not sufficient to reduce respiratory hazards to a level below established permissible exposure levels

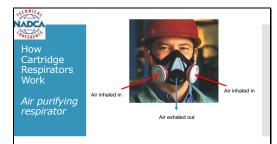
During emergencies



# Slide 11







#### Slide 14



- Must be the correct respirator for
- Must properly fit and be worn
- roperly
  Certain respirators cannot be used
  when Oxygen is <19.5% or in
  atmospheres immediately
  dangerous to life and health (IDLH)
- Must not be damaged or contaminated

#### Slide 15

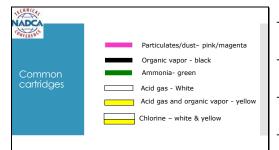


NIOSH classifies the filtering media based on its resistance to oil and particles

Resistance to oil is designated as 'N', 'R', or 'P' N= Not resistant to oil

R= Somewhat resistant to oil
P= Strongly resistant to oil

Particle Efficiency is '95', '99', or '99.97' correlates to the % of particles 0.3 microns or larger, filtered out.



#### Slide 17





NADCA ONFERENCE	
Assessing Employee Exposures	

- Personal monitoring is the most accurate
- If personal monitoring is not feasible or there is no specific requirement, estimate exposures by monitoring fixed locations or sampling for short periods of time during worst-case conditions
- · Historic data past data
- Objective data similar data

Note: Conditions can change day to day or employee to employee.

#### Slide 20



# Assigned Protection Factor

The level of respiratory protection that a respirator or class or respirators is expected to provide.

The exposure can be from a particulate, gas or vapor

#### Maximum Use Concentration

Maximum atmospheric concentration of a hazardous substance. Determined by the APF and the exposure limit of the hazardous substance.

#### MUC = APF x OEL (PEL, REL, TLV)

Measured air concentration of the chemical must be less than the calculated MUC to safely use the respirator

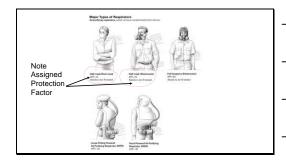
Do not use MUC for IDLH conditions

#### Slide 21

TABL	TABLE 1 – ASSIGNED PROTECTION FACTORS <sup>5</sup>							
Respirator Type <sup>1, 2</sup>	Quarter Mask	Half Mask	Full Face	Helmet/Hood	Loose-Fitting			
Air Purifying	5	310	50					
PAPR		50	1,000	425/1,000	25			
SAR								
Demand		10	50					
✓ Continuous Flow		50	1,000	425/1,000	25			
Pressure Demand/ other (+) pressure		50	1,000					
SCBA								
Demand		10	50	50				
Pressure Demand/ other (+) pressure			10,000	10,000				

Nay use respirators assigned for higher concentrations in lower concentrations or when required use is independent. These ePFT are only effective when employer has a continuing, effective respirate program or 1915; 134.

The APP contagory industrial before the project and established to be provided and a continuing and a conti



#### Slide 23



- ✓ Conduct an exposure assessment
- ✓ Consider job site and worker characteristics
- ✓ Evaluate atmospheric contaminants
- ✓ Understand respirator Assigned Protection Factors (APF)
- Evaluate respirators
   Identify cartridge/filter life expectancy

Respirators are NIOSH approved not 'OSHA approved or OSHA certified'





- ➤ Don/doff procedures
- ➤ Seal testing
- > Inspection and maintenance
- CleaningStorageCartridge change out schedule





# Slide 26





- 1. Written Respiratory Protection Program
  2. Establish Program Administrator
  3. Hazard Evaluation & Respirator Selection
  4. Medical Evaluations
  5. Fit Testing
  6. Proper Care and Use
  7. Training

- 7. Training8. Program Evaluation9. Recordkeeping



The Program Administrator has overall responsibility for the program.

- Must be designated by the employer (by
- Must be designated by the employer (by name).

  Must be 'suitably trained' and 'qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness'.

#### Slide 29



Employer must develop a written respiratory protection program:

- When use of any respirators in any work area where protection from airborne hazards is required

- Must be site-specificAll required elements must be in writing
- · Must be updated as necessary

OSHA's Small Entity Compliance Guide for the RP Standard can assist with program development. https://www.osha.gov/sites/default/files/publications/3384s mall-entity-for-respiratory-protection-standard-rev.pdf

#### Slide 30



Medical Evaluations

- To determine the employee's ability to use a respirator, <u>before</u> the employee is fit tested or required to use the respirator in the workplace
- Generally includes medical questionnaire, evaluation, pulmonary lung function test, chest X-ray
- Must comply with the appropriate standard. Online exams may not comply
- Administered confidentially during the employee's normal working hours or at a time and place convenient to the employee
- · X-rays must be read by a B-reader

# Slide 31 NADCA Required *Initially* and *Annually* for all tight-fitting respirators. Review medical opinion for restrictions (claustrophobia, glasses, work time, etc.) Must be repeated when there are significant changes to the face (dental work, weight loss/gain of +/- 20 lbs. Fit Testing • Face in the area where the seal meets the skin must be clean shaven – no stubble. Can be done qualitatively or quantitively Slide 32 **INDCA** General Requirements: · Must be provided to employees who are required to use Must be provided to employees who are required to use respirators Must be comprehensive, understandable, and recur annually and more often if necessary Training content outlined in the OSHA standard Retraining must be conducted annually or when: Workplace conditions change A different type of respirator is used Inadequacies in the employee's knowledge or use of the respirator Slide 33 Applies when employees choose to wear respirators when not required by OSHA NADCA or employer Employer must first confirm the respirator will not create an additional hazard Filtering facepieces (dust masks) Employers must provide Appendix D Other respirators Employers must implement a written program to include Medical evaluation

Maintenance and care of respirator

Training

#### Recordkeeping - OSHA Requirements for Document Retention

Record Type	Time*	Notes (see 29CFR1910.1020 for additional information)
Employee Medical Records	At least duration of employment plus 30 years	The medical records of employees who have worked for less than (1) year for the employer need not be retained beyond the term of employment if they are provided to the employee upon the termination of employment.
Employee Exposure Records	At least 30 years	Certain aspects of Safety Data Sheets must be saved for 30 years
Analyses using exposure or medical records	At least 30 years	Chest Xray films must be stored in their original state

#### Slide 35



- Background Small HVAC company growing and taking on
- Background Small HVAL Company growing and taking on more complicated projects Challenge clients have more stringent safety requirements, workers having some health issues. Company recognized need to improve RPP program to safeguard employee health, comply with OSHA and client requirements. Solution company implements a comprehensive RPP norgram by.

- Solution company implements a comprehensive RPP program by
  Hazard Assessment
  Respirator Selection
  Medical Evaluation and Fit Testing
  Training
  Outcome within 3 months company saw reduction in employee complaints, able to retain more client contracts, less concern about OSHA enforcement



- Background –HVAC company had a written RPP program but was not putting it into practice, an employee was experiencing health effects and called OSHA. OSHA calls the employer and follows up with a letter.

  Challenge Employer must respond within 5 days, identifying in writing any problems found and noting corrective actions taken or planned.

  Solution company prepares to perform the following

  Cease all work in Affected Areas

  Assign Program Administrator

  Hire an industrial hygienist to conduct a Hazard Assessment and Employee Monitoring

  Respirator Selection, Medical Evaluations and Fit Testing

  Update Written Program

  Perform Comprehensive Training

  Outcome company's guick and thorough response created a safer work environment and prevented an OSHA visit or resulting citation

NADCA	
How can you prepare?	

- ✓ Copy of written RPP program, current
- ✓ Name of Program Administrator
- List of employees trained in respirator use and training documents (annually)
- ✓ Medical records of each respirator user
- Fit Test records of each respirator user (updated annually). Results of any pre or post training evaluation of workers' knowledge
- ✓ Documentation of respirator care and maintenance
- ✓ Verification that respirators have been inspected for defects ✓ Air monitoring data and hazard assessment
- Descriptions of any problems encountered during work activities

Records of worker's exposure, medical data and air monitoring results are required to be kept by OSHA for a minimum of 30 years.

#### Slide 38



OSHA - provides guidelines and regulations on respirator use, including the correct types of respirators for different hazards. Their website offers comprehensive resources on respiratory protection standards and best professe.

practices.

National Institute for Occupational Safety and Health (NIOSH) offers detailed information on respirator selection, fit testing, and train

unars ostatiled intormation on respirator selection, fit testing, and training requirements. Link: NIOSH respirators

American Industrial Hygiene Association (AIHA) - publishes articles and guides on best practices for respiratory protection, including osses studies and research findings relevant to various industries, including duct cleaning.

duct cleaning.
Environmental Protection Agency (EPA) - provides information on managing and mitigating exposure to hazardous materials, including asbestos, which is relevant to duct cleaning scenarios. Link: EPA

Asbestos Information
Centers for Disease Control and Prevention (CDC) - offers resources
and recommendations on preventing respiratory illnesses, including
guidance on the use of personal protective equipment (PPE) in various
occupational settings. Link: CDC Respiratory Protection






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