



## County of Alameda

# Air Quality Employee Protection Policy

### **PURPOSE**

Smoke from wildfires contains chemicals, gases and fine particles that can harm health. The greatest hazard comes from breathing fine particles in the air that can reduce lung function, exacerbate asthma and other pre-existing medical conditions as well as cause coughing, wheezing and difficulty breathing. Per California Code of Regulations (“CCR”) Title 8 §5141.1, the purpose of this Air Quality Employee Protection Policy (hereafter, “Policy”) is to provide departments with measures to mitigate employees’ exposure when wildfire smoke is considered harmful.

### **SCOPE**

Exposure is harmful when the pollution or contaminants in the air cause (or are likely to cause) injury, illness, disease, impairment or loss of function. This Policy covers indoor and outdoor work environments, when current Air Quality Index (AQI) for PM2.5 is 151 (“unhealthy”) or greater, and when the County of Alameda (hereafter, “County”) reasonably anticipates that employees may be exposed to wildfire smoke.

The following workplaces and operations are exempt from this Policy:

- Enclosed buildings or structures in which the County ensures air is filtered by a functional mechanical ventilation system and that windows, doors, bays, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.
- Enclosed vehicles in which the air is filtered by a cabin air filter and the County ensures that windows, doors, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.
- Employees exposed to a current AQI for PM2.5 of 151 (“unhealthy”) or greater for a total of one (1) hour or less during a shift.
- Firefighters engaged in wildland firefighting.

### **RESPONSIBILITY**

1. Agency/Department Heads or their designee are responsible for ensuring their employees receive proper training regarding the hazards of wildfire smoke; the engineering and

administrative controls; and the proper use, training, and availability of Personal Protective Equipment (PPE).

2. Agency/Department Heads or their designee are responsible for monitoring air quality to determine whether outdoor air may cause "harmful exposure" to employees and implementing feasible modifications to the workplace to reduce or mitigate employee exposure.
3. Employees are responsible for adhering to safety requirements; communicating exposure concerns to their supervisor; speaking with their treating physician before donning PPE; and if choosing to wear PPE, properly donning their PPE.

## **METHODS OF COMPLIANCE**

1. Identification of harmful exposures. Agency/Department Heads or their designee shall determine employee exposure to unhealthy air quality for worksites covered by this Policy before and periodically during each shift by obtaining current AQI and forecasts from the following sources:
  - U.S. EPA at [AirNow.gov](http://AirNow.gov)
  - Bay Area Air Quality Management District at [baaqmd.gov](http://baaqmd.gov) or <https://www.sparetheair.org/> or by calling 1-800-Help-Air (435-7247) and select option "1" for touch tone, and select "1" again for daily AQI forecast information.
  - U.S. Forest Service Wildland Air Quality Response Program at <https://sites.google.com/firenet.gov/wfaqrp-external/home>
  - California Air Resources Board at <https://ww2.arb.ca.gov/>

The current AQI is divided into six (6) categories as shown in the table below:

<b>Air Quality Index Levels of Health Concern</b>	<b>Numerical Value</b>	<b>Meaning</b>
<b>Good</b>	<b>0 to 50</b>	<b>Air quality is considered satisfactory, and air pollution poses little or no risk.</b>
<b>Moderate</b>	<b>51 to 100</b>	<b>Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.</b>
<b>Unhealthy for Sensitive Groups</b>	<b>101 to 150</b>	<b>Members of sensitive groups may experience health effects. The general public is not likely to be affected.</b>
<b>Unhealthy</b>	<b>151 to 200</b>	<b>Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.</b>
<b>Very Unhealthy</b>	<b>201 to 300</b>	<b>Health warnings of emergency conditions. The entire population is more likely to be affected.</b>
<b>Hazardous</b>	<b>301 to 500</b>	<b>Health alert: everyone may experience more serious health effects.</b>

2. Two-Way Communication System. Department Head or designee shall establish and implement a system for communicating wildfire smoke hazards in a form readily understandable by all affected employees, including provisions designed to encourage employees to inform the County of wildfire smoke hazards at the worksite without fear of reprisal. The system shall include effective procedures for informing employees of:

- Necessary updates regarding current AQI
- Protective measures available to employees to reduce their wildfire smoke exposures
- Encouraging employees to inform their supervisor of:
  - Worsening air quality.
  - Symptoms that may be the result of wildfire smoke exposure such as asthma attacks, coughing, difficulty breathing, dizziness, nausea, and chest pain.

3. Training and instruction. Agency/Department Heads or their designee shall ensure their employees receive effective training and instruction. At a minimum, this shall contain the information in Title 8 CCR § 5141.1 Appendix B (Attachment):

- The health effects of wildfire smoke.
- The right to obtain medical treatment without fear of reprisal.
- How employees can obtain the current Air Quality Index (AQI).
- The requirements in Title 8 CCR § 5141.1 about wildfire smoke.
- The employer's two-way communication system.
- The employer's methods to protect employees from wildfire smoke.
- The importance, limitations, and benefits of using a respirator when exposed to wildfire smoke.
- How to properly put on, use, and maintain the respirators provided by the County.

4. Engineering and Administrative Controls to Protect Employees from Wildfire Smoke. Department Head or designee shall take action to mitigate employee exposure to wildfire smoke when the current AQI for PM2.5 is 151 ("unhealthy") or greater. Examples of protective methods that mitigate exposure include:

- Locating work in enclosed buildings or vehicles where the air is filtered.
- Relocating employees to an alternate location with a lower current AQI for PM2.5.
- Adjusting work hours in areas with unfiltered air.
- Increasing rest time and frequency and providing a rest area with filtered air.
- Reducing the physical intensity of the work to help lower the breathing and heart rates.
- Inform employees to keep doors and windows closed and report HVAC system concerns immediately in order to protect building occupants from outdoor air pollution, including the hazardous conditions resulting from wildfire smoke.

5. Prompt Medical Treatment. The County shall ensure that employees who are injured or made ill by wildfire smoke exposure at work shall receive prompt medical treatment. Employees requiring immediate attention should call 9-1-1 or go directly to the emergency room and identify themselves as Alameda County employees. If the injury or exposure is not considered to be a

medical emergency, employees should contact their supervisor immediately to report the incident. Supervisors will direct employees to receive prompt, appropriate medical care. For more information, please refer to the Alameda County Risk Management Unit website [here](#). No employee shall face reprisal for seeking medical treatment.

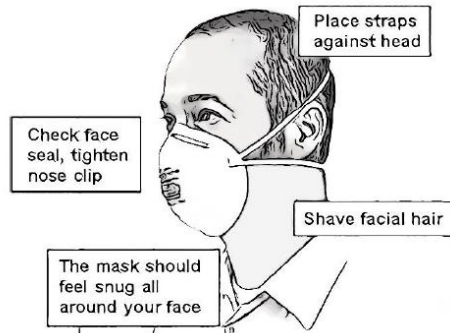
## **PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

Respiratory Protection. Where the current AQI for PM2.5 is equal to or greater than 151 but does not exceed 500, Agency/Department Heads or their designee shall provide N95 respirators to all employees for voluntary use in accordance with CCR Title 8 § 5144. Alameda County Risk Management will assist departments to complete fit testing, as needed and requested by employees who choose to use the County-provided N95 respirators. However, the County will endeavor to control harmful exposures to employees by relocating employees to an area where the AQI for PM2.5 is below 151 in order to avoid the need for respirator use. Respirators will be prioritized for those employees who do not have the option to work in an area where the AQI for PM2.5 is below 151. When using a respirator, the following precautions will be taken.

- Agency/Department Heads or their designee shall select respirators certified by the National Institute for Occupational Safety and Health (“NIOSH”) for protection against the specific air contaminants at the workplace
- An N95 filtering facepiece respirator, shown in the image below, is the minimum level of protection for wildfire smoke. Surgical masks or items worn over the nose and mouth such as scarves, T-shirts, and bandannas do not provide protection.
- Read and follow the manufacturer’s instructions on the respirator’s use, maintenance, cleaning and care, along with any warnings regarding the respirator’s limitations. For optimal protection, the manufacturer’s instructions for medical evaluations, fit testing, and shaving should be followed.
- Do not wear respirators in areas where the air contains contaminants for which the respirator is not designed. A respirator designed to filter particles will not protect employees against gases or vapors and it will not supply oxygen.
- Employees should ensure that they do not mistakenly use someone else's respirator.
- Employees who have a pre-existing medical condition that may be exacerbated by the use of a respirator should seek advice from their treating physician before using a respirator.

In the event that the current AQI for PM2.5 exceeds 500, respirator use is required pursuant to CCR Title 8 § 5144 and this Policy. Alameda County CAO-Risk Management Unit will assist departments to complete fit testing, as needed. The County shall provide respirators with an assigned protection factor such that the PM2.5 levels inside the respirator correspond to an AQI less than 151.

## Use of N95 Respirator Illustration



*Drawing Showing Proper Fitting of a Filtering Facepiece Respirator  
(shaving is not required for voluntary respirator use)*

*Note: The proper way to don a respirator depends on the type and model of the respirator. The presence of facial hair may affect the seal tightness around the user's face and interfere with the effectiveness of the respirator.*

For those who use an N95 or other filtering facepiece respirator mask that is made of filter material:

- Place the mask over the nose and under the chin, with one strap placed below the ears and one strap above.
- Pinch the metal part (if there is one) of the respirator over the top of the nose so it fits snugly and securely.
- For a respirator that relies on a tight seal to the face, check how well it seals to the face by following the manufacturer's instructions for user seal checks. Adjust the respirator if air leaks between the seal and the face. The more air leaks under the seal, the less protection the user receives.
- Replace Respirator filters if they get damaged, deformed, dirty, or difficult to breathe through.
- Filtering facepiece respirators are disposable respirators that cannot be cleaned or disinfected. A best practice is to replace filtering facepiece respirators at the beginning of each shift.
- If you have symptoms such as difficulty breathing, dizziness, or nausea, go to an area with cleaner air, take off the respirator, and get medical help

For questions regarding this Policy, contact County of Alameda  
Risk Management Unit or Human Resource Services.

## Appendix B to Section 5141.1. Protection from Wildfire Smoke Information to Be Provided to Employees (Mandatory)

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### (a) The health effects of wildfire smoke.

Although there are many hazardous chemicals in wildfire smoke, the main harmful pollutant for people who are not very close to the fire is "particulate matter," the tiny particles suspended in the air.

Particulate matter can irritate the lungs and cause persistent coughing, phlegm, wheezing, or difficulty breathing. Particulate matter can also cause more serious problems, such as reduced lung function, bronchitis, worsening of asthma, heart failure, and early death.

People over 65 and people who already have heart and lung problems are the most likely to suffer from serious health effects.

The smallest -and usually the most harmful -particulate matter is called PM<sub>2.5</sub> because it has a diameter of 2.5 micrometers or smaller.

### (b) The right to obtain medical treatment without fear of reprisal.

Employers shall allow employees who show signs of injury or illness due to wildfire smoke exposure to seek medical treatment, and may not punish affected employees for seeking such treatment. Employers shall also have effective provisions made in advance for prompt medical treatment of employees in the event of serious injury or illness caused by wildfire smoke exposure.

### (c) How employees can obtain the current Air Quality Index (AQI) for PM<sub>2.5</sub>.

Various government agencies monitor the air at locations throughout California and report the current AQI for those places. The AQI is a measurement of how polluted the air is. An AQI over 100 is unhealthy for sensitive people and an AQI over 150 is unhealthy for everyone.

Although there are AQIs for several pollutants, Title 8, section 5141.1 about wildfire smoke only uses the AQI for PM<sub>2.5</sub>.

The easiest way to find the current and forecasted AQI for PM<sub>2.5</sub> is to go to [www.AirNow.gov](http://www.AirNow.gov) and enter the zip code of the location where you will be working. The current AQI is also available from the U.S. Forest Service at <https://tools.airfire.org/> or a local air district, which can be located at [www.arb.ca.gov/capcoa/dismap.htm](http://www.arb.ca.gov/capcoa/dismap.htm). Employees who do not have access to the internet can contact their employer for the current AQI. The EPA website [www.enviroflash.info](http://www.enviroflash.info) can transmit daily and forecasted AQIs by text or email for particular cities or zip codes.

### (d) The requirements in Title 8, section 5141.1 about wildfire smoke.

If employees may be exposed to wildfire smoke, then the employer is required to find out the current AQI applicable to the worksite. If the current AQI for PM<sub>2.5</sub> is 151 or more, the employer is required to:

- (1) Check the current AQI before and periodically during each shift.
- (2) Provide training to employees.
- (3) Lower employee exposures.
- (4) Provide respirators and encourage their use.

### (e) The employer's two-way communication system.

Employers shall alert employees when the air quality is harmful and what protective measures are available to employees.

Employers shall encourage employees to inform their employers if they notice the air quality is getting worse, or if they are suffering from any symptoms due to the air quality, without fear of reprisal.

The employer's communication system is:

### (f) The employer's methods to protect employees from wildfire smoke.

Employers shall take action to protect employees from PM<sub>2.5</sub> when the current AQI for PM<sub>2.5</sub> is 151 or greater. Examples of protective methods include:

- (1) Locating work in enclosed structures or vehicles where the air is filtered.
- (2) Changing procedures such as moving workers to a place with a lower current AQI for PM<sub>2.5</sub>.

- (3) Reducing work time in areas with unfiltered air.
- (4) Increasing rest time and frequency, and providing a rest area with filtered air.
- (5) Reducing the physical intensity of the work to help lower the breathing and heart rates.

The employer's control system at this worksite is:

(g) The importance, limitations, and benefits of using a respirator when exposed to wildfire smoke.

Respirators can be an effective way to protect employee health by reducing exposure to wildfire smoke, when they are properly selected and worn. Respirator use can be beneficial even when the AQI for PM2.5 is less than 151, to provide additional protection.

When the current AQI for PM2.5 is 151 or greater, employers shall provide their workers with proper respirators for voluntary use. If the current AQI is greater than 500, respirator use is required.

A respirator should be used properly and kept clean.

The following precautions shall be taken:

- (1) Employers shall select respirators certified for protection against the specific air contaminants at the workplace. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Center for Disease Control and Prevention certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will list what the respirator is designed for (particulates, for example).

Surgical masks or items worn over the nose and mouth such as scarves, T-shirts, and bandannas will not provide protection against wildfire smoke. An N95 filtering facepiece respirator, shown in the image below, is the minimum level of protection for wildfire smoke.

- (2) Read and follow the manufacturer's instructions on the respirator's use, maintenance, cleaning and care, along with any warnings regarding the respirator's limitations. The manufacturer's instructions for medical evaluations, fit testing, and shaving should also be followed, although doing so is not required by Title 8, section 5141.1 for voluntary use of filtering facepiece respirators.
- (3) Do not wear respirators in areas where the air contains contaminants for which the respirator is not designed. A respirator designed to filter particles will not protect employees against gases or vapors, and it will not supply oxygen.
- (4) Employees should keep track of their respirator so that they do not mistakenly use someone else's respirator.
- (5) Employees who have a heart or lung problem should ask their doctor before using a respirator.

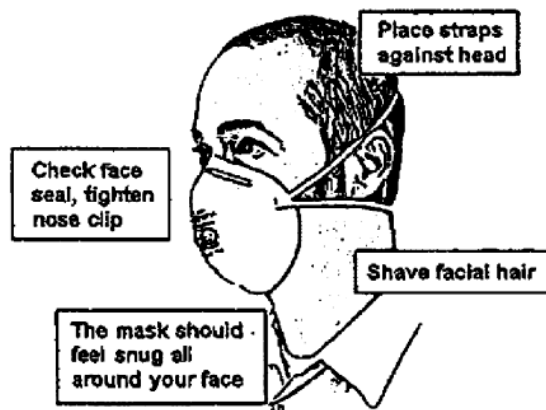
(h) How to properly put on, use, and maintain the respirators provided by the employer.

To get the most protection from a respirator, there must be a tight seal around the face. A respirator will provide much less protection if facial hair interferes with the seal. Loose-fitting powered air purifying respirators may be worn by people with facial hair since they do not have seals that are affected by facial hair.

The proper way to put on a respirator depends on the type and model of the respirator.

For those who use an N95 or other filtering facepiece respirator mask that is made of filter material:

- (1) Place the mask over the nose and under the chin, with one strap placed below the ears and one strap above.
- (2) Pinch the metal part (if there is one) of the respirator over the top of the nose so it fits securely.



***Drawing Showing Proper Fitting of a Filtering Facepiece Respirator  
(shaving is not required for voluntary respirator use)***

For a respirator that relies on a tight seal to the face, check how well it seals to the face by following the manufacturer's instructions for user seal checks. Adjust the respirator if air leaks between the seal and the face. The more air leaks under the seal, the less protection the user receives.

Respirator filters should be replaced if they get damaged, deformed, dirty, or difficult to breathe through. Filtering facepiece respirators are disposable respirators that cannot be cleaned or disinfected. A best practice is to replace filtering facepiece respirators at the beginning of each shift.

If you have symptoms such as difficulty breathing, dizziness, or nausea, go to an area with cleaner air, take off the respirator, and get medical help.

Note: Authority cited: Section 142.3, Labor Code. Reference: Sections 142.3 and 144.6, Labor Code.

#### HISTORY

1. New Appendix B filed 7-29-2019 as an emergency; operative 7-29-2019 (Register 2019, No. 31). A Certificate of Compliance must be transmitted to OAL by 1-27-2020 or emergency language will be repealed by operation of law on the following day.
2. New Appendix B refiled 1-16-2020 as an emergency; operative 1-24-2020 pursuant to Government Code section 11346.1(d) (Register 2020, No. 3). A Certificate of Compliance must be transmitted to OAL by 4-23-2020 or emergency language will be repealed by operation of law on the following day.
3. New Appendix B refiled 4-30-2020 as an emergency; operative 6-23-2020 pursuant to Government Code section 11346.1(d) (Register 2020, No. 18). A Certificate of Compliance must be transmitted to OAL by 9-21-2020 or emergency language will be repealed by operation of law on the following day.