

Kern County

Wildfire Smoke Protection Program

Quick Compliance – Outdoor workers exposed to unhealthy air quality due to wildfire smoke shall be trained and protected using all available hazard control methods including the voluntary usage of disposable (N95) particulate filtering respirators.

I. POLICY DESCRIPTION

This policy specifies safe work practices when the air quality equals or exceeds the Air Quality Index (AQI) of 151, for particulate matter (PM) 2.5 or smaller, due to wildfire smoke. This program applies to employees exposed to such conditions for greater than one (1) cumulative hour per work shift.

This program covers the County safe work practices and procedures for preventing injury and illness from wildfire smoke in accordance with the County Injury and Illness Prevention Program (IIPP) and California Code of Regulations, Title 8, General Industry Safety Orders, Division 1, Chapter 4, Section 5141.1, Protection from Wildfire Smoke.

II. REGULATIONS/AUTHORITIES

California Code of Regulations Title 8, section 5141.1 (Effective 7/29/19)

III. POLICY

If employees may be exposed to wildfire smoke, then the department is required to find out the current AQI applicable to the worksite. If the current AQI for PM2.5 is 151 or greater, the department 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.

IV. IDENTIFICATION OF HARMFUL EXPOSURES

For worksites covered by this program, departments shall determine employee exposure to PM 2.5 prior to each shift and, periodically throughout the day. Air Quality Index (AQI) forecasts and current AQI for PM 2.5 shall be obtained by inputting the appropriate worksite zip code, using the U.S. EPA AIRNOW website at <https://www.airnow.gov/> (See Appendix A, for further information on accessing and maneuvering in this website). As an alternative, employees can contact the San Joaquin Unified Air Pollution District at (559-230-6000) or visit their website at http://www.valleyair.org/General_info/contact_the_district.htm for current AQI information. Another option is the Eastern Kern Air Pollution Control District website at <http://www.kernair.org>.

It is also highly recommended that employees download the EPA's AIRNow I-Phone application for instantly available AQI and related health information. (See Appendix A, Training, for further information on how to download the application)

Note: Worksites covered by this policy are to include any site where it can be reasonably anticipated that employees may be exposed to wildfire smoke.

The following county workplaces are exempt from this policy:

- A. Enclosed buildings or structures in which the air is filtered by a mechanical ventilation system and the department ensures that windows, doors, bays, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.
- B. Enclosed vehicles in which the air is filtered by a cabin air filter and the department ensures that windows, doors, and other openings are kept closed to minimize contamination by outdoor or unfiltered air.

V. COMMUNICATION

As required by CCR section 3203, departments shall implement a system for communicating wildfire smoke hazards in a form readily understandable to affected employees.

Methods of communication shall include, but not be limited to, pre-job/pre-task planning meetings, daily briefings, emails, text messaging, conference calls, and other effective means.

Employees shall be encouraged to report any worsening outdoor conditions, as well as to report any adverse symptoms resulting from wildfire exposure without fear of reprisal. Departments, through management or supervisory personnel, shall alert employees when the air quality is harmful and what protective measures are available to employees.

VI. HAZARD CONTROL METHODS FOR EMPLOYEE EXPOSURES

- A. **Engineering Controls:** Departments shall reduce the employee exposure to PM2.5 to less than a current AQI of 151 by engineering controls, whenever feasible, for instance, by providing enclosed buildings, structures, or vehicles where the air is filtered. If engineering controls are not enough to reduce exposure to PM2.5 to less than a current AQI OF 151, then the department shall reduce employee exposures as much as feasible.
- B. **Administrative Controls:** Whenever engineering controls are not feasible, or do not reduce employee exposures to PM2.5 to less than a current AQI of 151, the employer shall implement administrative controls, if practicable, such as relocating work to a location where the current AQI for PM2.5 is lower, changing work schedules, reducing work intensity, or providing additional rest periods.
- C. **Personal Protective Equipment (N95 particulate respirators)**
1. **Where the current AQI for PM2.5 is equal to or greater than 151, but does not exceed 500**, the department shall provide N95 particulate respirators to all affected employees **for voluntary use** in accordance with Title 8 CCR, §5144 and encourage employees to use respirators. Respirators shall be National Institute for Occupational Safety and Health (NIOSH) approved devices that effectively protect the wearers from inhalation of PM2.5. The N95 particulate respirator is the minimum level of protection required for wildfire smoke. In addition to N class respirators, R and P class units with efficiency ratings of 95, 99, and 100 are also acceptable under NIOSH guidelines.
 2. Respirators shall be cleaned, stored, maintained, and replaced so that they do not present a health hazard to users. Respirators must be replaced at least every eight hours, or sooner if the respirator becomes damaged, soiled, or breathing becomes difficult. An adequate supply of N95 particulate respirators shall be made readily available at each affected worksite when necessary.

Note: For voluntary use of filtering facepieces, such as N95 particulate respirators, fit testing and medical evaluations will not be required.
 3. Where the current AQI for PM2.5 exceeds 500, a higher level of respirator use is required in accordance with Title 8 CCR, §5144. Contact the County Safety Officer for assistance in such a circumstance.

4. 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. The proper way to put on a respirator depends on the type and model of the respirator. (As shown in the below image)
5. 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 N-95 filtering facepiece respirator is the minimum level of protection for wildfire smoke.
6. How to properly don, use, and maintain particulate respirators:
 - Step 1. Place the mask over the nose and under the chin, with one strap placed below the ears and one strap above.
 - Step 2. Pinch the metal sealing strip (if there is one) of the respirator over the top of the nose so it fits securely.



Note: Shaving is not required for voluntary respirator use, however, it is recommended for a proper facial seal.

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. Respirators must be replaced if they get damaged, deformed, dirty, or difficult to breathe through. Particulate respirators are disposable respirators that cannot be cleaned or disinfected. At a minimum, replace particulate 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 if necessary.

VII. RESPONSIBILITIES

Management shall:

- A. Ensure the elements of this program are followed by all affected employees, personal service contractors, interns, and volunteers.
- B. Ensure employees are provided the resources and training necessary to safely implement this program.
- C. Ensure all potentially exposed departmental job classifications and tasks affected by this program are identified.
- D. Ensure periodic audits and inspections of the workplace are conducted to maintain compliance with this and all other departmental safety programs.

Supervisors shall:

- A. Ensure training is provided for all affected employees under their supervision.
- B. Maintain accurate training records.
- C. Ensure effective two-way communication exists between employees and supervision.
- D. Monitor employee exposure to unhealthy AQI of 151 or greater during the work shift.
- E. Ensure adequate supplies of approved particulate respirators are readily available at the worksite.
- F. Periodically monitor the AQI when the index is equal to or exceeds 151 and ensure this information is effectively communicated in a form readily understandable to all employees.
- G. Ensure employees have access to prompt medical care without fear of reprisal.

Employees shall:

- A. Follow the procedures and safe work practices of this program.
- B. Inform their supervisor if they notice air quality is getting worse or they are suffering symptoms due to poor air quality.
- C. Attend safety training on the application of this program and to inform their supervisors if they did not understand any of the provisions herein.

VIII. REFERENCES/RESOURCE MATERIALS

- Appendix A - Employee Training Standards
- Appendix B - Training Handout
- Appendix C – Definitions

**APPENDIX A
EMPLOYEE TRAINING STANDARDS**

Employee Training interval:

1. Initial training shall be provided to all potentially affected employees.
2. Retraining shall be required upon changes to this program.
3. Annual refresher training is recommended.

Departments shall ensure that all potentially affected employees are trained on the following:

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 PM2.5 because it has a diameter of 2.5 micrometers or smaller.

B. The right to obtain medical treatment without fear of reprisal.

Departments 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. Departments 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; i.e. access to contacting “911” would constitute an effective provision.

C. How employees can obtain the current Air Quality Index (AQI) for PM2.5.

The County method for finding the current and forecasted AQI for PM2.5 is to go to www.AirNow.gov and enter the zip code of the location where you will be working. Alternatively, the current AQI is also available from the

U.S. Forest Service at <https://tools.airfire.org/> or

San Joaquin Valley Air Pollution Control District at (209-557-6400), which can be located at <https://www.valleyair.org/Home.htm>.

Employees who do not have access to the internet can contact their supervisor for the current AQI. The EPA website www.enviroflash.info can transmit daily and forecasted AQIs by text or email for particular cities or zip codes.

As an additional resource, the EPA 'AIRNow' application for iPhone and Android allows for immediate access to current and forecasted AQI. Departments may contact Information Technology Central (ITC) or their respective IT staff to have the application installed on County smartphones as appropriate.

D. 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, departments shall provide their workers with NIOSH approved particle respirators for voluntary use. If the current AQI is greater than 500, a higher level of respirator use is required. A respirator should be used properly and kept clean.

The following precautions shall be taken:

- (1) Departments 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 must 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 particulate respirator, shown in Appendix B, 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.
- (5) Employees who have a heart or lung problem should ask their doctor before using a respirator.

APPENDIX B TRAINING HANDOUT

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 PM2.5 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: daily tailgate meetings, telephone, radio, text, emails, or other effective means.

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

Employers shall take action to protect employees from PM2.5 when the current AQI for PM2.5 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 PM2.5.
- (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.
- (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.

APPENDIX C DEFINITIONS

Air Quality Index

The method used by the U.S. Environmental Protection Agency (U.S. EPA) to report air quality on a real-time basis. Current AQI is also referred to as the “NowCast”, and represents data collected over time periods of varying length in order to reflect present conditions as accurately as possible. The current AQI is divided into six categories as shown in the table below, adapted from Table 2 of Title 40 Code of Federal Regulations, Part 58 Appendix G.

Air Quality Index (AQI) for Particulate Matter (PM) 2.5 Microns in Diameter or less	Levels of Health Concern
<u>0 to 50</u>	<u>Good</u>
<u>51 to 100</u>	<u>Moderate</u>
<u>101 to 150</u>	<u>Unhealthy for Sensitive Groups</u>
<u>151 to 200</u>	<u>Unhealthy</u>
<u>201 to 300</u>	<u>Very Unhealthy</u>
<u>301 to 500</u>	<u>Hazardous</u>
<u>Note: 1 Micron = 1/25,000th inch</u>	

NIOSH

The National Institute for Occupational Safety and Health of the U.S. Centers for Disease Control and Prevention. NIOSH tests and approves respirators for use in the workplace.

NIOSH Link: <https://www.cdc.gov/niosh/topics/respirators/default.html>

PM 2.5

Solid particles and liquid droplets suspended in air, known as Particulate Matter (PM), with an aerodynamic diameter of 2.5 micrometers or smaller.

Wildfire Smoke

Emissions from fires in wildlands; i.e. sparsely populated areas covered primarily by grass, brush, trees, crops, or a combination thereof.