



MANAGEMENT: WILDFIRE SMOKE

NOTE: This lesson was written on February 3, 2020 for the California emergency regulations for wildfires. This lesson will be updated when the permanent regulations have been passed and adopted.

INTRODUCTION

When employees work in areas that are prone to wildfires, there is a chance that they may be exposed to wildfire smoke. Smoke exposure will depend on the size of the fire and how far it has spread. Due to high levels of wildfire smoke being produced from large fires, California has enacted certain requirements that employers (managers and supervisors) need to follow when a wildfire is occurring in order to properly protect their employees.



WHEN AND WHERE DO THESE REGULATIONS APPLY?

Managers and supervisors are required to provide protection against wildfire smoke when the current Air Quality Index (AQI) for PM2.5 is 151 or greater, regardless of the AQI for other pollutants and when it can be reasonably anticipated that employees could be exposed to wildfire smoke.

Note: PM2.5, also known as particulate matter, are solid particles and liquid droplets that are suspended in the air that have an aerodynamic diameter of 2.5 micrometers or smaller.

Note: The only workplaces and operations that are exempt from this requirement are enclosed buildings or structures in which air is filtered by a mechanical ventilation system and enclosed vehicles that have air which is filtered by a cabin air filter. Additionally, windows, doors, bays, and other openings need to be kept closed as to minimize the contamination by outdoor or unfiltered air.

Workplaces and operations may also be exempt if one of the following conditions can be met:

- It can be demonstrated that the concentration of PM2.5 in the air does not exceed a concentration that corresponds to a current AQI of 151 or greater by measuring PM2.5 at levels at the worksite in accordance with the chart found under the Air Quality Index section of this lesson.
- That employees are only exposed to current AQI for PM2.5 of 151 or greater for a total of one hour or less during a shift.
- Firefighters who are engaged in wildland firefighting.

AIR QUALITY INDEX

Under the regulations, managers and supervisors are required to check the current Air Quality Index when wildfire smoke could be forecasted or is known to be in the area. The AQI is divided into six categories, which may be found in the table below.

Air Quality Index (AQI)	
Categories for PM2.5	Levels of Health Concern
0 to 50	Good
51 to 100	Moderate
101 to 150	Unhealthy for Sensitive Groups
151 to 200	Unhealthy
201 to 300	Very Unhealthy
301 to 500	Hazardous



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The AQI forecasts and the current AQI for PM2.5 can be checked at the following websites:

- U.S. EPA AirNow (<https://www.airnow.gov/>)
- U.S. Forest Service Wildland Air Quality Response Program (<https://sites.google.com/firenet.gov/wfaqrp-external/home>)
- California Air Resources Board (<https://ww2.arb.ca.gov/homepage>)
- Local air pollution control district
- Local air quality management district

Note: Managers and supervisors can obtain the AQI forecasts and current AQI for PM2.5 directly from the EPA, California Air Resources Board, local air pollution control district or local air quality management district by telephone, email, text, or other effective method.

In the event, that a manager or supervisor chooses or cannot check the websites listed above, they must measure the PM2.5 levels at the worksite and convert the PM2.5 levels to the corresponding AQI listed below. This can be achieved by using a direct-reading particulate monitor, if the manager or supervisor can demonstrate that he or she has complied with all monitor requirements.

PM2.5 in Micrograms per Cubic Meter (µg/m3)	Air Quality Index (AQI) Categories for PM2.5
0 to 12.0	0 to 50
12.1 to 35.4	51 to 100
35.5 to 55.4	101 to 150
55.5 to 150.4	151 to 200
150.5 to 250.4	201 to 300
250.5 to 500.4	301 to 500

COMMUNICATION

When there is a chance of exposure to wildfire smoke, managers and supervisors should communicate the hazards of wildfire smoke to all affected employees in a form that is readily understandable.

Communications should include:

- The current AQI for PM2.5 as identified in the charts found in the Air Quality Index section.
- The implementation of protective measures available to affected employees.
- The encouragement of employees to inform managers and supervisors of worsening air quality and any adverse symptoms such as asthma attacks, difficulty breathing, and chest pain that they are experiencing.

CONTROLS

To help minimize or prevent exposure to wildfire smoke, managers and supervisors should implement one or more of the following:

- Engineering controls such as providing enclosed buildings, structures, or vehicles where air can be filtered.
- Administrative controls such as relocating work to a location where the current AQI for PM2.5 is less than a current AQI of 151, changing work schedules, reducing work intensity, or providing additional rest periods.
- Providing respirators to affected employees. If the current AQI is equal or greater than 151, but does not exceed 500, managers and supervisors should provide respirators to employees for voluntary use. Employees that use respirators should receive training on the proper use and care of the respirator in accordance with all Cal/OSHA regulations.



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When employees are required to wear or voluntarily use a respirator, employers have an obligation to ensure that no harm comes from wearing a respirator. Therefore, if an employer is unaware of an individual's medical history, that individual should have a medical evaluation performed prior to allowing them to wear a respirator.

TRAINING

Managers and supervisors should ensure that affected employees receive training on the health affects of wildfire smoke and the proper use and care of respirators if they are being provided.

CONCLUSION

Wildfire smoke could potentially cause harm to employees who work in it. Mangers and supervisors should follow all regulations to ensure that employee exposure to wildfire smoke is minimized or prevented. They can do so by monitoring the air quality and implementing a mixture of controls and personal protective equipment, as wildfire smoke can spread further then the fire.

