

CALIFORNIA INDUSTRIAL HYGIENE COUNCIL

*Advancing public policy to improve the health and safety
of workers and the community.*

May 10, 2019

Ms. Amalia Neidhardt
Senior Industrial Engineer
Division of Occupational Safety and Health
California Department of Industrial Relations
1515 Clay Street
Oakland, CA 94612

RE: Emergency Regulation §5141.1, Protection from Wildfire Smoke – Discussion Draft

Dear Ms. Neidhardt:

This letter is to summarize the comments of the California Industrial Hygiene Council (CIHC) as presented at the May 8, 2019 advisory meeting regarding suggested changes to the proposed regulation. CIHC written comments were also provided on 4/26/19.

Attached to this letter (Attachment A) are suggested changes to the discussion draft regulation in strikeout/underline format. Also attached (Attachment B) is a version showing the same suggested changes, but without the strikeout/underline format for easier reading. The changes are intended to:

- afford for the protection of employees in a quick, responsive, uncomplicated manner;
- provide a regulation that is easy to interpret by affected employers;
- promote prompt implementation in an emergency situation; and
- allow for adoption of an emergency regulation within the required time constraints.

CIHC's comments can be summarized as follows. Our view of the regulation is that the intent is to define emergency procedures for the protection of outdoor workers from wildfire smoke. Employers would fall under the scope of the regulation whenever there is a wildfire smoke advisory issued by a local, regional, state, or federal government agency and there is a possibility that their outdoor employees will be exposed to wildfire smoke affecting their work locations. When the employer falls within the scope, procedures must be implemented. These procedures would include employee training, using Appendix A information, and the provision of N95 respirators for voluntary use by all outdoor employees. The AQI is not a factor in our recommended regulation for reasons previously submitted in our written and verbal comments.

CIHC appreciates the opportunity to be involved in the development of this regulation. We look forward to continued participation and providing a technical resource for the process. Please contact me on behalf of CIHC at (916) 712-4547 or kwa-sacramento@att.net.

Very truly yours,
California Industrial Hygiene Council



Pamela Murcell, MS, CIH
President, CIHC

Attachments A & B

Attachment A: California Industrial Hygiene Council
Recommended Changes to the Discussion Draft
May 10, 2019

§5141.1. Emergency Procedures for ~~Protecting~~ Outdoor Workers from Wildfire Smoke.

(a) Scope and application.

~~(1)~~ This section applies to outdoor workplaces where ~~the Air Quality Index (AQI) for PM2.5 is greater than 150, regardless of the AQI for other pollutants, and~~

~~(A)~~ a wildfire smoke advisory has been issued by a local, regional, state, or federal government agency; and ~~or~~

~~(B)~~ if there is a realistic possibility that outdoor employees may be exposed to wildfire smoke.

~~Note 1: The AQI and AQI forecasts are available from the U.S. Environmental Protection Agency AirNow website, California Air Resources Board, air pollution control districts, and air quality management districts.~~

Note 1: Information on areas where smoke from wildland fires may be of concern and wildfire smoke forecasts are provided by the Wildland Fire Air Quality Response Program (WFAQRP) of the U.S. Forest Service.

For the advisory meeting, some additional sources for wildfire smoke and air quality are:
<http://californiasmokeinfo.blogspot.com>
<https://inciweb.nwcg.gov/>
https://www.airnow.gov/index.cfm?action=topics.smoke_wildfires
<https://fires.airfire.org/outlooks>
<https://sites.google.com/firenet.gov/wfaqrp-external/home>

~~(2)~~ (1) The following workplaces and operations are exempt from this section:

(A) Enclosed buildings or structures where the air is filtered by a mechanical ventilation system and employee exposure to outdoor or unfiltered air is effectively limited.

(B) Enclosed vehicles where the air is filtered by a cabin air filter and employee exposure to outdoor or unfiltered air is effectively limited.

~~(C) The employer demonstrates that the concentration of PM2.5 in the air does not exceed a concentration that corresponds to an AQI of 150.~~

~~(D)~~ (C) Firefighters engaged in wildland firefighting.

~~(E)~~ (D) Emergency response personnel performing lifesaving emergency rescue and evacuation.

~~(3) For workplaces covered by this section, an employer that is in compliance with this section will be considered compliant with sections 5141 and 5155 for PM2.5 with an AQI over 150.~~

(b) Definitions.

~~**Air Quality Index (AQI).** The official index for reporting air quality based on the National Ambient Air Quality Standards set by the U.S. Environmental Protection Agency under the federal Clean Air Act. AQI requirements are specified in the Code of Federal Regulations (CFR) at 40 CFR section 58.50, Index Reporting, and 40 CFR Appendix G to Part 58, Uniform Air Quality Index (AQI) and Daily Reporting. The AQI index is divided into six categories as shown in the table below (adapted from Table 2 of 40 CFR Appendix G to Part 58).~~

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AQI Categories for PM2.5

Air Quality Index (AQI) Categories for PM2.5	PM2.5 in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)	Levels of Health Concern
0 to 50	0 to 12.0	Good
51 to 100	12.1 to 35.4	Moderate
101 to 150	35.5 to 55.4	Unhealthy for Sensitive Groups
151 to 200	55.5 to 150.4	Unhealthy
201 to 300	150.5 to 250.4	Very Unhealthy
301 to 500	250.5 to 500.4	Hazardous

Effective filtration of PM2.5. An area within enclosed buildings, structures, or vehicles that meets either of the following:

- (1) The air is filtered by mechanical ventilation system(s) with MERV 13 or equivalent filters, or by more effective filters such as HEPA filters; or
- (2) The concentration of PM2.5 corresponds to an AQI of 150 or less.

High-efficiency particulate air (HEPA) filter. A filter that is at least 99.97 percent efficient in removing particles 0.3 micrometers in diameter.

MERV. Minimum Efficiency Reporting Value for air filters established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-2017 Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size.

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.

PM2.5. Particulate matter (solid particles and liquid droplets) suspended in air with an aerodynamic diameter of less than 2.5 micrometers.

Wildfire Smoke. Emissions from planned or unplanned fires in "wildlands" (as defined in section 3402), wildland-urban interfaces, or adjacent developed areas.

(c) **Emergency Procedures/Identification of harmful exposures.** Whenever an employee may reasonably be expected to be exposed to wildfire smoke based on the criteria identified in subsection (a) ~~an AQI greater than 150~~, the employer shall provide training as specified in subsection (d) and exposure control as specified in subsection (e) ~~check AQI forecasts and the current AQI on the AirNow website. The employer shall determine the AQI where employees are located, before each shift, and periodically thereafter as needed. The employer may also obtain AQI forecasts and the current AQI from the California Air Resources Board, the local air pollution control district, or the local air quality management district.~~

(d) **Communication.** The employer shall establish and implement a system for communicating wildfire smoke hazards, as required by section 3203, in a form readily understandable by all affected employees without fear of reprisal. The system shall include effective procedures for:

- (1) Informing employees of:
 - (A) The current PM2.5 levels;
 - (B) Changes in conditions that may lead to a worsening of air quality, such as changing wind patterns or temperature inversions; and

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~~(C) Protective measures available to employees to reduce their wildfire smoke exposures.~~

~~(2) Encouraging employees to inform the employer of:~~

~~(A) Worsening of air quality;~~

~~(B) Changes in conditions that may lead to a worsening of air quality, such as changing wind patterns;
and~~

~~(C) Any adverse symptoms likely resulting from wildfire smoke exposure such as asthma attacks,
difficulty breathing, and chest pain.~~

(d) Training.

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(1) The employer shall provide outdoor employees with effective training, in a form readily understandable by all affected employees, when the emergency situation is first identified.

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(2) The training shall cover, at a minimum, the information provided in Appendix A of this section, on all of the following:

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(3) The training shall be documented and the documentation shall include attendee names, attendee signatures, trainer name and signature, training date and time allotted, description of training content, and type of training.

~~(e) (4) The employer shall develop the training in advance of the need in order to expedite training implementation when the emergency situation is first identified.~~

~~(1) Health effects of wildfire smoke.~~

~~(2) The employer's communication system required by subsection (d).~~

~~(3) The right to obtain medical treatment in the event of injury or illness without fear of reprisal.~~

~~(4) How employees can check the AQI at their location.~~

~~(5) Requirements of this section.~~

~~(6) Employer's methods to protect employees from wildfire smoke.~~

~~(7) Importance, limitations, and benefits of using a respirator when exposed to wildfire smoke.~~

~~(8) How to properly put on, use, and maintain the respirators provided by the employer.~~

~~(9) What actions to take if an emergency evacuation of the work area becomes necessary.~~

~~NOTE: See Appendix A of this section for information required to be included in employee training.³~~

(f)(e) Control of harmful exposures to employees.

~~(1) Engineering Controls. Employee exposures to wildfire smoke shall be controlled in accordance with Title 8 CCR 5141. PM2.5 corresponding to an AQI exceeding 150 shall be prevented by engineering controls whenever feasible, such as providing enclosed structures or vehicles with effective filtration of PM2.5 for employees to work in.~~

(1) EXCEPTION to subsection (f)(1). The employer is not required to implement engineering controls for employees who are exposed to PM2.5 corresponding to an AQI exceeding 150 for less than one-hour during a shift.

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~~(2) Administrative Controls. Whenever engineering controls are not feasible or do not reduce employee exposures to PM2.5 corresponding to an AQI of 150 or less, administrative controls shall be implemented, if practicable, such as relocating work to a location where the AQI is lower, changing work schedules, reducing work intensity, or providing additional rest periods.~~

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Recommended Changes to the Discussion Draft
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~~(3)~~(2) Control by Respiratory Protective Equipment. If respiratory protection is used for control of exposure, such equipment shall be used in accordance with Title 8 CCR 5144. ~~Where feasible engineering controls and administrative controls fail to eliminate employee exposure to PM2.5 corresponding to an AQI of 150 or less, employers shall comply with the following:~~

- (A) ~~Where the AQI exceeds 150 and is less than 301, T~~he employer shall provide respirators to all employees for voluntary use in accordance with section 5144 and encourage employees to use respirators. Respirators shall be NIOSH-approved devices that effectively protect the wearers from inhalation of wildfire smoke~~PM2.5~~ (such as N95 filtering facepiece respirators).

Respirators shall be

(Note: text continues on next page)

¹ Appendix A is a placeholder. The content of required training will be spelled out in the appendix after discussions with stakeholders.

Attachment A: California Industrial Hygiene Council
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cleaned, stored, and maintained so that they do not present a health hazard to users. ~~Employers shall use Appendix A to this section in lieu of Appendix D to section 5144 for training regarding voluntary use of respirators.~~

~~NOTE 1 for subsection (f)(3)(A). Respirator use is not required when the AQI is less than 301.~~

NOTE ~~1~~² for subsection ~~(f)(3)~~^(e)~~(A)~~⁽²⁾(A). For voluntary use of filtering facepieces, such as N95 respirators, section 5144 does not require fit testing or medical evaluations. For voluntary use of respirators that are not filtering facepieces, such as those with an elastomeric facepiece, section 5144 does not require fit testing, but does require medical evaluations.

~~(B) Where the AQI is 301 or greater, respirators shall be used in accordance with section 5144. The assigned protection factor of respirators shall ensure that the concentration of PM2.5 inside the respirator corresponds to an AQI of 150 or less.~~

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ATTACHMENT B: CALIFORNIA INDUSTRIAL HYGIENE COUNCIL
RECOMMENDED LANGUAGE
May 10, 2019

§5141.1. Emergency Procedures for Protecting Outdoor Workers from Wildfire Smoke.

(a) Scope and application.

This section applies to outdoor workplaces where a wildfire smoke advisory has been issued by a local, regional, state, or federal government agency; and there is a realistic possibility that outdoor employees may be exposed to wildfire smoke.

Note 1: Information on areas where smoke from wildland fires may be of concern and wildfire smoke forecasts are provided by the Wildland Fire Air Quality Response Program (WFAQRP) of the U.S. Forest Service.

(1) The following workplaces and operations are exempt from this section:

- (A) Enclosed buildings or structures where the air is filtered by a mechanical ventilation system and employee exposure to outdoor or unfiltered air is effectively limited.
- (B) Enclosed vehicles where the air is filtered by a cabin air filter and employee exposure to outdoor or unfiltered air is effectively limited.
- (C) Firefighters engaged in wildland firefighting.
- (D) Emergency response personnel performing lifesaving emergency rescue and evacuation.

(b) Definitions.

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.

Wildfire Smoke. Emissions from planned or unplanned fires in “wildlands” (as defined in section 3402), wildland-urban interfaces, or adjacent developed areas.

(c) Emergency Procedures. Whenever an employee may reasonably be expected to be exposed to wildfire smoke based on the criteria identified in subsection (a), the employer shall provide training as specified in subsection (d) and exposure control as specified in subsection (e).

(d) Training.

(1) The employer shall provide outdoor employees with training, in a form readily understandable by all affected employees, when the emergency situation is first identified.

(2) The training shall cover, at a minimum, the information provided in Appendix A¹ of this section.

(3) The training shall be documented and the documentation shall include attendee names, attendee signatures, trainer name and signature, training date and time allotted, description of training content, and type of training.

(4) The employer shall develop the training in advance of the need in order to expedite training implementation when the emergency situation is first identified.

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¹Appendix A is a placeholder. The content of required training will be spelled out in the appendix after discussions with stakeholders.

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(e)Control of exposures to employees.

- (1) Employee exposures to wildfire smoke shall be controlled in accordance with section 5141.
- (2) Control by Respiratory Protective Equipment. If respiratory protection is used for control of exposure, such equipment shall be used in accordance with section 5144.
 - (A) The employer shall provide respirators to all employees for voluntary use in accordance with section 5144 and encourage employees to use respirators. Respirators shall be NIOSH-approved devices that effectively protect the wearers from inhalation of wildfire smoke (such as N95 filtering facepiece respirators). Respirators shall be cleaned, stored, and maintained so that they do not present a health hazard to users.

NOTE 1 for subsection (e)(2)(A). For voluntary use of filtering facepieces, such as N95 respirators, section 5144 does not require fit testing or medical evaluations. For voluntary use of respirators that are not filtering facepieces, such as those with an elastomeric facepiece, section 5144 does not require fit testing, but does require medical evaluations.