

**WSR 21-15-067**  
**EMERGENCY RULES**  
**DEPARTMENT OF**  
**LABOR AND INDUSTRIES**

[Filed July 16, 2021, 8:14 a.m., effective July 16, 2021, 8:14 a.m.]

Effective Date of Rule: Immediately upon filing.

Purpose: The department of labor and industries (L&I) is adopting emergency rules regarding wildfire smoke under chapter 296-62 WAC, General occupational health standards. L&I recognizes the hazard of wildfire smoke exposure is increasing every year and potentially presents serious health risks to all workers, especially those working outside in industries such as construction and agriculture. L&I has received a petition for rule making regarding wildfire smoke protections after the historic 2020 wildfires, which created unprecedented smoke conditions in the state. The state of California has adopted similar temporary and permanent workplace safety and health rules regarding wildfire smoke.

A major component of wildfire smoke is particulate matter with an aerodynamic diameter less than 2.5 micrometers (PM<sub>2.5</sub>); inhalation of PM<sub>2.5</sub> can cause cardiovascular health effects and increases the risk of death. PM<sub>2.5</sub> is elevated during wildfire smoke events, causing a risk to workers.

This emergency rule applies to workplaces where the employer should reasonably anticipate that employees may be exposed to wildfire smoke. Exempt workplaces and operations are:

- Enclosed buildings or structures in which the employer ensures that windows, doors, bays, and other exterior openings are kept closed, except when it is necessary to open doors to enter and exit.
- Enclosed vehicles in which the air is filtered by a cabin air filter and the employer ensures that windows, doors, and other openings are kept closed except when it is necessary to open doors to enter or exit.
- Employees exposed to a concentration of PM<sub>2.5</sub> of 20.5µg/m<sup>3</sup> (equivalent Washington air quality advisory level or "WAQA" of 101, equivalent Air Quality Index or "AQI" of 69) or more for a total of one hour or less during a shift.
- Firefighters engaged in wildland firefighting.

This emergency rule includes:

- Requirements for employers to determine PM<sub>2.5</sub> levels at their worksites by checking one of the listed web-based sources or directly measuring PM<sub>2.5</sub> at their worksite.
- Requirements for hazard communication to notify employees when the PM<sub>2.5</sub> levels reach 55.5 µg/m<sup>3</sup> (WAQA 173, AQI 151).
- Requirements for training both supervisors and line staff who may be exposed to PM<sub>2.5</sub> levels of 20.5 µg/m<sup>3</sup> (WAQA 101, AQI 69) or above on the hazards of wildfire smoke and the procedures regarding the employer's plan for ensuring workers are protected from wildfire smoke.
- Requirements for monitoring and allowing for medical care for employees who display symptoms of illness related to wildfire smoke.

- Requirements for implementation of engineering and administrative controls whenever PM<sub>2.5</sub> reaches 55.5 µg/m<sup>3</sup> (WAQA 173, AQI 151) and such controls are feasible.
- Requirements for supplying respiratory protection for employees use on a voluntary basis whenever PM<sub>2.5</sub> reaches 55.5 µg/m<sup>3</sup> (WAQA 173, AQI 151).

The emergency rule ensures that workers in Washington are provided protections from the hazard of wildfire smoke inhalation while L&I proceeds with the implementation of the wildfire smoke permanent rule making.

In addition, L&I filed a Preproposal statement of inquiry (CR-101) on October 20, 2021, WSR 20-21-093, regarding permanent rule making for hazards relating to wildfire smoke events. Some additions made as part of the emergency rule will be considered for permanent rule making. The department will be seeking comments from affected stakeholders during the permanent rule-making process.

Citation of Rules Affected by this Order: New WAC 296-62-085, 296-62-08510, 296-62-08520, 296-62-08530, 296-62-08540, 296-62-08550, 296-62-08560, 296-62-08570, 296-62-08580, 296-62-08585, and 296-62-08590.

Statutory Authority for Adoption: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, and 49.17.240.

Under RCW 34.05.350 the agency for good cause finds that immediate adoption, amendment, or repeal of a rule is necessary for the preservation of the public health, safety, or general welfare, and that observing the time requirements of notice and opportunity to comment upon adoption of a permanent rule would be contrary to the public interest.

Reasons for this Finding: Wildfire smoke is composed of harmful chemicals and tiny particles suspended in the air that present a significant health hazard for workers exposed to it. These particles can irritate the lungs and cause serious or even fatal health effects, such as reduced lung function, bronchitis, worsening of asthma, and heart failure. Compared with the general public, workers have additional risk factors in that they may spend more time outdoors in the smoke, and have more physical exertion, which increases the amount of smoke that they breathe into their lungs. Individuals considered sensitive to wildfire smoke exposure, such as those with asthma, are also part of the workforce.

The United States Environmental Protection Agency's (EPA) AQI is an informational tool for reporting air quality. Under the Clean Air Act, the EPA sets and reviews national air quality standards for several air pollutants, including PM<sub>2.5</sub>. AQI is a scale of 1 to 500 divided into six color-coded categories that correspond to different levels of health concerns (good, moderate, unhealthy for sensitive groups, unhealthy, very unhealthy, and hazardous). The AQI level of 101 is categorized as "unhealthy for sensitive groups" and corresponds to PM<sub>2.5</sub> concentrations of 35.5 µg/m<sup>3</sup>. The Washington state department of ecology has an informational tool called WAQA. The WAQA is similar to the AQI as both use color-coded categories to show when air quality ranges from good to hazardous; however, the WAQA has lower PM<sub>2.5</sub> concentrations associated with each level. For example, the WAQA index of 101 for unhealthy for sensitive [groups] corresponds to a PM<sub>2.5</sub> concen-

tration of 20.5  $\mu\text{g}/\text{m}^3$  and the WAQA level of 151 for unhealthy corresponds to a concentration  $\text{PM}_{2.5}$  35.5  $\mu\text{g}/\text{m}^3$ .

California is currently the only state with rules for occupational exposure to wildfire smoke, although Oregon is in the process of developing rules. California's rule requires employers take preventative measures when the current EPA AQI is 151 or greater (unhealthy). Specific to respirators, California's rule requires employers to implement engineering and administrative controls and make respirators available for voluntary use at an AQI of 151 (55.4  $\mu\text{g}/\text{m}^3$ ). Mandatory respirator use is required when the AQI is greater than 500 (500  $\mu\text{g}/\text{m}^3$ ). Mandatory respirator use requires compliance with California's respiratory program rules, including fit testing and medical evaluations.

For the past several summers, the L&I's division of occupational safety and health (DOSH) received inquiries about wildfire smoke hazards for outdoor workers. DOSH has put out guidance and information on best practices but recognizes there is a gap under current rules to adequately protect workers from this hazard and to ensure employers and workers understand what is required. After the unprecedented wildfire smoke events in 2020, the department reviewed the need for rules and also received a petition requesting rule making. The department determined that rule making was needed to address the hazard. The department held five virtual stakeholder meetings from January - June 2021 to discuss development of a permanent rule and emergency rules.

However, it has not been practicable to adopt a permanent rule in time for this year's wildfire season where immediate action is necessary. Immediate adoption of a rule is necessary for the preservation of worker health and safety and it would be contrary to the public interest to wait until a permanent rule can be adopted. The fire season is imminent and existing regulations are not sufficient to protect workers from the dangers of wildfires. Washington state is experiencing an historic drought that is exacerbating fire danger across the state, and abnormally high temperatures and dry conditions have led to the early development of dangerous fire fuel conditions throughout the state. This has been exacerbated by the recent heat waves in the Pacific Northwest. Wildfire smoke can travel hundreds to thousands of miles and wildfires in other states and in Canada can cause hazardous air quality levels in Washington. Active wildfires are occurring in Washington at this time, as well as in California, Oregon, Canada, and Idaho. The governor issued Emergency Proclamation 21-10 on July 6, 2021, implementing a statewide burn ban due to the likelihood of wildfires.

While the department provided draft emergency rules for stakeholder input, the emergency process does not allow for the opportunity for notice and comment that are part of the permanent rule-making process.

So L&I is taking emergency action to avert the development of wildfire smoke-related illnesses among Washington's workforce and ensure employers can train employees, plan for their response, and obtain the necessary respirators for employee voluntary use when wildfire events do happen.

Consistent with the mandate under the WISH Act, the department has looked at the best available evidence and determined that there are feasible measures to address the health hazards wildfire smoke presents for workers. The emergency rule requires employers to implement engineering and administrative controls and make respirators

available for voluntary use at a PM<sub>2.5</sub> concentration of 55.5 µg/m<sup>3</sup> (unhealthy under the AQI) but encourages employers to take these actions at a PM<sub>2.5</sub> concentration [concentration] of 20.5 (unhealthy for sensitive groups under the WAQA). Under this approach, enforcement levels is [are] set at the same as California, which has been a feasible approach. The permanent rule process will continue to examine the hazards of PM<sub>2.5</sub> exposure levels and appropriate protections necessary.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 11, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 11, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 11, Amended 0, Repealed 0.

Date Adopted: July 16, 2021.

Joel Sacks  
Director

**OTS-3201.2**

### **PART I-3—WILDFIRE SMOKE**

#### NEW SECTION

**WAC 296-62-085 Wildfire smoke.**

[ ]

#### NEW SECTION

**WAC 296-62-08510 Purpose and scope.** (1) This standard applies to workplaces where the employer should reasonably anticipate that employees may be exposed to wildfire smoke; and

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

(a) Enclosed buildings or structures in which the employer ensures that windows, doors, bays, and other exterior openings are kept closed, except when it is necessary to open doors to enter and exit.

(b) Enclosed vehicles in which the air is filtered by a cabin air filter and the employer ensures that windows, doors, and other openings are kept closed except when it is necessary to open doors to enter or exit.

(c) Employees exposed to a concentration of NowCast  $PM_{2.5}$  of  $20.5\mu g/m^3$  (NowCast *Washington Air Quality Advisory 101*, NowCast Air Quality Index 69) or more for a total of one hour or less during a shift.

(d) Firefighters engaged in wildland firefighting.

**Note:** Requirements for workers performing wildland firefighting can be found in chapter 296-305 WAC.

[ ]

#### NEW SECTION

**WAC 296-62-08520 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.

**NowCast Air Quality Index (AQI).** The method used by the U.S. Environmental Protection Agency (EPA) to communicate air quality using color-coded categories. It shows the air quality for the most current hour available by using a calculation that involves multiple hours of past data using the NowCast. The NowCast uses longer averages during periods of stable air quality and shorter averages when air quality is changing rapidly, such as during a wildfire. The NowCast is generally updated every hour.

**NowCast  $PM_{2.5}$ .** The concentration of  $PM_{2.5}$  for the most current hour available by using a calculation that involves multiple hours of past data using the NowCast. The NowCast uses longer averages during periods of stable air quality and shorter averages when air quality is changing rapidly, such as during a wildfire. The NowCast is generally updated every hour.

**NowCast Washington air quality advisory (WAQA).** The method used by the Washington state department of ecology to communicate air quality using color-coded categories. It shows the air quality for the most current hour available by using a calculation that involves multiple hours of past data using the NowCast. The NowCast uses longer averages during periods of stable air quality and shorter averages when air quality is changing rapidly, such as during a wildfire. The NowCast is generally updated every hour.

**$PM_{2.5}$ .** Solid particles and liquid droplets suspended in air, known as particulate matter, with an aerodynamic diameter of 2.5 micrometers or smaller. Measured in micrograms per cubic meter ( $\mu g/m^3$ ).

**Sensitive groups.** People with preexisting health conditions and those who are sensitive to air pollution who are among those most likely to experience health problems from exposure to wildfire smoke. Examples of sensitive groups include:

- People with lung diseases such as asthma or chronic obstructive pulmonary disease (COPD), including bronchitis and emphysema, and those who smoke;
  - People with respiratory infections, such as pneumonia, acute bronchitis, bronchiolitis, colds, flu, or those with, or recovering from COVID-19;
  - People with existing heart or circulatory problems, such as irregular heart beat, congestive heart failure, coronary artery disease, angina, and those who have had a heart attack or stroke;
  - Children under eighteen years old, and adults over age sixty-five;
  - Pregnant women;
  - People with diabetes;
  - People with other medical or health conditions which can be exacerbated by exposure to wildfire smoke as determined by a physician.
- Wildfire smoke.** Emissions from fires in wildlands or in adjacent developed areas.
- Wildlands.** Sparsely populated geographical areas covered primarily by grass, brush, trees, crops, or combination thereof.

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#### NEW SECTION

**WAC 296-62-08530 Identification of harmful exposures.** The employer shall determine employee exposure to PM<sub>2.5</sub> for worksites covered by this section before each shift and periodically thereafter, as needed to protect the health of the employee, by any of the following methods:

(1) Obtain the PM<sub>2.5</sub> levels using one of the following measures and sources:

(a) NowCast PM<sub>2.5</sub>, available at:

- U.S. Forest Service AirFire website <http://tools.airfire.org/> monitoring; or
- Other online sources.

(b) NowCast AQI, available at:

- U.S. EPA AirNow website <https://www.airnow.gov/>;
- "EPA AirNow" mobile app (free);
- U.S. Forest Service AirFire website <http://tools.airfire.org/> monitoring;
- EPA Enviroflash.info <http://www.enviroflash.info/>;
- Other online sources; or
- Directly from the U.S. EPA or local clean air agency by telephone, email, text, or other effective method.

(c) NowCast WAQA, available at:

- Washington Air Monitoring Network website <https://enviwa.ecology.wa.gov/home/map>;
- "AirQualityWA" mobile app (free);
- Washington Smoke Information website <https://wasmoke.blogspot.com/>; or
- Directly from the Washington state department of ecology, or local clean air agency by telephone, email, text, or other effective method.

(d) If the NowCast WAQA or NowCast AQI are used, the employer must use the following table to find the equivalent WAQA or AQI for PM<sub>2.5</sub>.

NowCast PM <sub>2.5</sub> in Micrograms per Cubic Meter (µg/m <sup>3</sup> )	NowCast Washington Air Quality Advisory (WAQA)	NowCast Air Quality Index (AQI)
20.5µg/m <sup>3</sup>	101	69
55.5µg/m <sup>3</sup>	173	151

(2) Measure PM<sub>2.5</sub> levels at the work location in accordance with WAC 296-62-08585 Appendix A of this part.

**EXCEPTION:** The employer does not have to determine employee exposure as required by this subsection if the employer assumes the NowCast PM<sub>2.5</sub> is more than 55.5µg/m<sup>3</sup> (WAQA 173, AQI 151) and uses that assumption to comply with the requirements in WAC 296-62-085 through 296-62-08590.

[ ]

NEW SECTION

**WAC 296-62-08540 Hazard communication.** For any worksite covered by this section, the employer must 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 employer of wildfire smoke hazards at the worksite without fear of reprisal.

The system shall include effective procedures for:

(1) Informing employees:

(a) When the NowCast PM<sub>2.5</sub> as identified in WAC 296-62-08530 is 55.5µg/m<sup>3</sup> (WAQA 173, AQI 151) or more; and

(b) Of the protective measures available to them to reduce their wildfire smoke exposures.

(2) Encouraging employees to inform the employer of:

(a) Worsening air quality; and

(b) Any adverse symptoms that may be the result of wildfire smoke exposure such as asthma attacks, difficulty breathing, and chest pain.

(3) Including wildfire smoke in the written accident prevention program. At a minimum, the written program must include the information in WAC 296-62-08590 Appendix B.

[ ]

NEW SECTION

**WAC 296-62-08550 Information and training.** The employer must provide all workers effective information and training regarding wildfire smoke before work that exposes the worker to PM<sub>2.5</sub> levels of 20.5µg/m<sup>3</sup> (WAQA 101, AQI 69) or more, and at least annually thereafter.

(1) Information and training must be provided in a manner and language readily understood by the workers.

(2) At a minimum, the training must include the information in WAC 296-62-08590 Appendix B.

(3) Supervisor training. Prior to supervising employees performing work that exposes the worker to PM<sub>2.5</sub> levels that are 20.5µg/m<sup>3</sup> (WAQA 101, AQI 69) or more, supervisors must have training on the information in WAC 296-62-08590 Appendix B, and the following topics:

(a) Procedures the supervisor must follow to implement the applicable provisions of WAC 296-62-085 through 296-62-08590 wildfire smoke;

(b) Procedures the supervisor must follow if an employee exhibits adverse symptoms of wildfire smoke exposure, including appropriate emergency response procedures; and

(c) Procedures for moving or transporting employees to an emergency medical service provider, if necessary.

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#### NEW SECTION

**WAC 296-62-08560 Exposure symptom response.** (1) Employees displaying adverse symptoms of wildfire smoke exposure must be monitored to determine whether medical attention is necessary.

(2) Employers must allow employees who show signs of injury or illness due to wildfire smoke exposure to seek medical treatment, and may not retaliate against affected employees for seeking such treatment.

(3) Employers must 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.

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#### NEW SECTION

**WAC 296-62-08570 Exposure controls.** (1) Where the NowCast PM<sub>2.5</sub> is 20.5µg/m<sup>3</sup> (WAQA 101, AQI 69) or more, the employer is encouraged to implement exposure controls.

(2) Where the NowCast PM<sub>2.5</sub> is 55.5µg/m<sup>3</sup> (WAQA 173, AQI 151) or more, the employer must implement exposure controls whenever feasible.

(3) Such controls include:

(a) Providing enclosed buildings, structures, or vehicles where the air is adequately filtered;

(b) Providing portable HEPA filters in enclosed areas;

(c) Relocating work to a location with a lower ambient air concentration of PM<sub>2.5</sub>;

(d) Changing work schedules to a time with a lower ambient air concentration of PM<sub>2.5</sub>;

(e) Reducing work intensity;

(f) Providing additional rest periods.

**EXCEPTION:** In emergencies, including rescue and evacuation, engineering and administrative controls in WAC 296-62-08570 (1) and (2) are not required. Emergencies include utilities, communications, and medical operations, when such operations are directly aiding firefighting or emergency response.

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NEW SECTION

**WAC 296-62-08580 Respiratory protection.** (1) Where the NowCast PM<sub>2.5</sub> is 20.5µg/m<sup>3</sup> (WAQA 101, AQI 69) or more, the employer is encouraged to provide respirators at no cost to employees upon request. Alternatively, workers may request to provide and wear their own respiratory protection voluntarily.

(2) Where the NowCast PM<sub>2.5</sub> is 55.5µg/m<sup>3</sup> (WAQA 173, AQI 151) or more, the employer must provide respirators at no cost to all employees, and encourage employees to use respirators.

(3) Respirators shall be NIOSH-approved devices that effectively protect the wearers from inhalation of PM<sub>2.5</sub>, such as N95 filtering facepiece respirators.

(4) Employers may provide KN95 filtering facepiece respirators during the 2021 wildfire season.

(5) Respirators shall be cleaned, stored, maintained, and replaced so that they do not present a health hazard to users.

(6) Employers shall use WAC 296-62-08590 Appendix B of this part in lieu of the advisory information in Table 2 of WAC 296-842-11005 for training regarding voluntary use of respirators for wildfire smoke.

**Note:** For voluntary use of filtering facepiece respirators, such as N95 respirators, some of the requirements of chapter 296-842 WAC, Safety Standards for Respirators, do not apply, such as fit testing and medical evaluations. If elastomeric respirators are used voluntarily, additional requirements from chapter 296-842 WAC, Respirators apply such as medical evaluations and establishing a respiratory protection program.

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NEW SECTION

**WAC 296-62-08585 Appendix A: Protection from wildfire smoke measuring PM<sub>2.5</sub> levels at the worksite (mandatory if an employer monitors with a direct reading instrument).** (1) An employer may use a direct-reading particulate monitor to identify harmful exposures as required by WAC 296-62-08530, if the employer can demonstrate that it has complied with this appendix and selected a monitor that:

(a) Does not underestimate employee exposures to wildfire smoke;  
or

(b) May underestimate wildfire smoke exposures, but the employer has obtained information on the possible error of the monitor from the manufacturer or other published literature and has accounted for the error of the monitor when determining exposures to PM<sub>2.5</sub> to ensure that employee exposure levels are not underestimated.

(2) The monitor shall be designed and manufactured to measure the concentration of airborne particle sizes ranging from an aerodynamic diameter of 0.3 micrometers or less, up to and including 2.5 micrometers (≤0.3µm to 2.5µm). The employer may use a monitor that measures a particle size range beyond these limits, if the employer treats the results as the PM<sub>2.5</sub> levels.

(3) The employer shall ensure that the monitor it uses is calibrated, maintained, and used, including the use of necessary accessories, in accordance with the manufacturer's instructions for accurately measuring PM<sub>2.5</sub> concentrations.

(4) The person supervising, directing, or evaluating workplace monitoring for PM<sub>2.5</sub> shall have the training or experience necessary to apply this section and to ensure the correct use of the monitor and the interpretation of the results, so that exposures are not underestimated.

[ ]

NEW SECTION

**WAC 296-62-08590 Appendix B: Protection from wildfire smoke information to be provided to employees (mandatory).** (1) 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.

Greater concentrations of particulate matter in the air create more of a hazard for workers. This rule requires that employers implement protections for workers once the amount of particulate matter in the air reaches a certain concentration: A NowCast PM<sub>2.5</sub> 55.5µg/m<sup>3</sup> (WAQA 173, AQI 151).

However, some workers may experience health effects at NowCast PM<sub>2.5</sub> levels of 20.5µg/m<sup>3</sup> (WAQA 101, AQI 69) or lower, especially if they belong to a sensitive group. Employers are encouraged to implement exposure controls and provide respirators at no cost to employees where the NowCast PM<sub>2.5</sub> is 20.5µg/m<sup>3</sup> (WAQA 101, AQI 69). Employees may request to provide their own respirator for voluntary use at any NowCast PM<sub>2.5</sub> level below 55.5µg/m<sup>3</sup> (WAQA 173, AQI 151).

Sensitive groups. People with preexisting health conditions and those who are sensitive to air pollution who are among those most likely to experience health problems from exposure to wildfire smoke. Examples of sensitive groups include:

- People with lung diseases such as asthma or chronic obstructive pulmonary disease (COPD), including bronchitis and emphysema, and those who smoke;
- People with respiratory infections, such as pneumonia, acute bronchitis, bronchiolitis, colds, flu, or those with, or recovering from COVID-19;
- People with existing heart or circulatory problems, such as irregular heart beat, congestive heart failure, coronary artery disease, angina, and those who have had a heart attack or stroke;
- Children under eighteen years old, and adults over age sixty-five;
- Pregnant women;
- People with diabetes;
- People with other medical or health conditions which can be exacerbated by exposure to wildfire smoke as determined by a physician.

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

Employers must 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 must 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.

(3) How employees can obtain the NowCast PM<sub>2.5</sub> in the air.

Various government agencies monitor the air at locations throughout Washington and report the NowCast PM<sub>2.5</sub> for those places. Both the Washington air quality advisory (WAQA) and the Air Quality Index (AQI) use the air quality data from these regulatory monitors. While both the WAQA and AQI use the same data to provide an indicator of how unhealthy the current air quality is, the WAQA uses lower thresholds for reporting the health hazard.

Although the government monitoring stations may measure several pollutants, this chapter only uses PM<sub>2.5</sub>. There are several ways to determine the PM<sub>2.5</sub> levels. Note that if you choose to use an index such as WAQA or AQI, use the following table to find the equivalent WAQA or AQI for PM<sub>2.5</sub>.

NowCast PM <sub>2.5</sub> in Micrograms per Cubic Meter (µg/m <sup>3</sup> )	NowCast Washington Air Quality Advisory (WAQA)	NowCast Air Quality Index (AQI)
20.5µg/m <sup>3</sup>	101	69
55.5µg/m <sup>3</sup>	173	151

(4) Some sources to obtain this data include:

(a) NowCast PM<sub>2.5</sub>, available at:

- U.S. Forest Service AirFire website <https://tools.airfire.org/> monitoring.

(b) NowCast AQI, available at:

- U.S. EPA AirNow website <https://www.airnow.gov/>;
- "EPA AirNow" mobile app (free);
- U.S. Forest Service AirFire website <https://tools.airfire.org/> monitoring;
- EPA Enviroflash.info <http://www.enviroflash.info/> (provides notifications).

(c) NowCast WAQA, available at:

- Washington Air Monitoring Network website <https://enviwa.ecology.wa.gov/home/map>;
- "Air Quality WA" mobile app (free);
- Washington Smoke Information website <https://wasmoke.blogspot.com/>.

Employees who do not have access to the internet or phone can contact their employer for the NowCast PM<sub>2.5</sub>.

(5) The requirements of WAC 296-62-085 through 296-62-08590, wildfire smoke rule.

If employees may be exposed to wildfire smoke, then the employer is required to:

(a) Check the NowCast PM<sub>2.5</sub> before and periodically during each shift.

(b) Provide training to employees if they are exposed to wildfire smoke at NowCast PM<sub>2.5</sub> levels of 20.5µg/m<sup>3</sup> (WAQA 101, AQI 69) or more.

(c) Implement a two-way communication system.

(d) Provide engineering and administrative controls when the NowCast PM<sub>2.5</sub> is 55.5µg/m<sup>3</sup> (WAQA 173, AQI 151) or more if feasible.

(e) Provide respirators and encourage their use when the NowCast  $PM_{2.5}$  is  $55.5\mu g/m^3$  (WAQA 173, AQI 151) or more.

Employers shall alert employees when the NowCast  $PM_{2.5}$  is  $55.5\mu g/m^3$  (WAQA 173, AQI 151) or more, 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: \_\_\_\_\_

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

Employers are encouraged to take action to protect employees from wildfire smoke when the NowCast  $PM_{2.5}$  is  $20.5\mu g/m^3$  (WAQA 101, AQI 69) and must take action to protect employees from wildfire smoke when the NowCast  $PM_{2.5}$  is  $55.5\mu g/m^3$  (WAQA 173, AQI 151). Examples of protective methods include:

(a) Locating work in enclosed structures or vehicles where the air is filtered.

(b) Changing procedures such as moving workers to a place with a lower  $PM_{2.5}$ .

(c) Reducing work time in areas with unfiltered air.

(d) Increasing rest time and frequency, and providing a rest area with filtered air.

(e) Reducing the physical intensity of the work to help lower the breathing and heart rates.

The employer's control system at this worksite is: \_\_\_\_\_

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(7) 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  $PM_{2.5}$  is  $20.5\mu g/m^3$  or lower, to provide additional protection.

When the NowCast  $PM_{2.5}$  is  $20.5\mu g/m^3$  (WAQA 101, AQI 69) or more, employers are encouraged to make proper respirators available to workers who may choose to use them voluntarily.

When the NowCast  $PM_{2.5}$  is  $55.5\mu g/m^3$  (WAQA 173, AQI 151) or more, employers must make proper respirators available to workers who may choose to use them voluntarily.

If an employer declines to provide respirators to a worker below NowCast  $PM_{2.5}$  of  $55.5\mu g/m^3$  (WAQA 173, AQI 151), the worker may request to provide their own respirator for voluntary use. The training contained in this section, meets the requirements for voluntary use respirator training.

A respirator should be used properly and kept clean.

The following precautions must be taken:

(a) 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. Centers for Disease Control and Prevention certifies respirators. A label or statement of certification should appear on the respirator or res-

pirator packaging. It will list what the respirator is designed for (particulates, for example). KN95 respirators may also be used if adequate supply of NIOSH approved respirators is not available.

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.

(b) 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 to ensure the best protection against wildfire smoke, although doing so is not required for voluntary use of filtering facepiece respirators.

(c) 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 workers against gases or vapors, and it will not supply oxygen.

(d) Employees should keep track of their respirator so that they do not mistakenly use someone else's respirator.

(e) Employees who have a heart or lung problem should ask their doctor before using a respirator.

(8) 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:

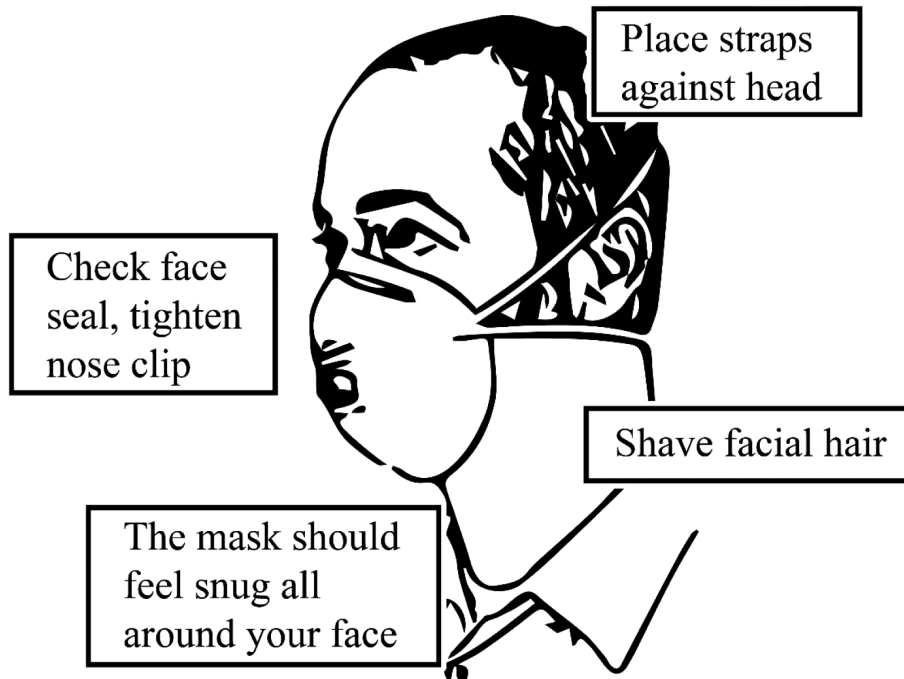
(a) Place the mask over the nose and under the chin, with one strap placed below the ears and one strap above.

(b) Pinch the metal part (if there is one) of the respirator over the top of the nose so it fits securely.

(c) Perform a seal check:

(i) Cover the respirator with both hands and exhale. If air leaks where the respirator seals against the face, readjust the respirator and nosepiece and try again. When a proper fit is achieved, the respirator should bulge from the face and not leak around the seal.

(ii) Cover the respirator with both hands and inhale. If air leaks where the respirator seals against the face, readjust the respirator and nosepiece and try again. When a proper fit is achieved, the respirator should collapse slightly and not leak around the 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.

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.

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