

SPOKANE COUNTY FIRE DISTRICT 8

Standard Operating Procedures

40.01.09
WILDFIRE SMOKE
MITIGATION &
COMMUNICATION



Adopted: 06/07/22
Reviewed: 00/00/00
Revised: 00/00/00

Approved:

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Purpose: To outline procedures during poor air quality

References: WAC 296-62-08590 Appendix B

Procedure:

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 PM2.5 55.5µg/m³ (WAQA 173, AQI 151). However, some workers may experience health effects at NowCast PM2.5 levels of 20.5µg/m³ (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 PM2.5 is 20.5µg/m³ (WAQA 101, AQI 69). Employees may request to provide their own respirator for voluntary use at any NowCast PM2.5 level below 55.5µg/m³ (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; [6] OTS-3201.2
- 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;

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- 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 PM2.5 in the air. Various government agencies monitor the air at locations throughout Washington and report the NowCast PM2.5 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 PM2.5. There are several ways to determine the PM2.5 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 PM2.5. NowCast PM2.5 in Micrograms per Cubic Meter ($\mu\text{g}/\text{m}^3$) NowCast Washington Air Quality Advisory (WAQA) NowCast Air Quality Index (AQI) 20.5 $\mu\text{g}/\text{m}^3$ 101 69 55.5 $\mu\text{g}/\text{m}^3$ 173 151
 4. Some sources to obtain this data include:
 - a) NowCast PM2.5, 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/>.

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Employees who do not have access to the internet or phone can contact their employer for the NowCast PM2.5. [7] OTS-3201.2

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 PM2.5 before and periodically during each shift.
 - b) Provide training to employees if they are exposed to wildfire smoke at NowCast PM2.5 levels of 20.5µg/m3 (WAQA 101, AQI 69) or more.
 - c) Implement a two-way communication system. (d) Provide engineering and administrative controls when the NowCast PM2.5 is 55.5µg/m3 (WAQA 173, AQI 151) or more if feasible. (e) Provide respirators and encourage their use when the NowCast PM2.5 is 55.5µg/m3 (WAQA 173, AQI 151) or more. Employers shall alert employees when the NowCast PM2.5 is 55.5µg/m3 (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.
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 PM2.5 is 20.5µg/m3 (WAQA 101, AQI 69) and must take action to protect employees from wildfire smoke when the NowCast PM2.5 is 55.5µg/m3 (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 PM2.5.
 - 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:
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 PM2.5 is 20.5µg/m3 or lower, to provide additional protection. When the NowCast PM2.5 is 20.5µg/m3 (WAQA

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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 55.5µg/m³ (WAQA 173, AQI 151) or more, employers must make proper respirators available to workers who may choose to use them voluntarily. [8] OTS-3201.2 If an employer declines to provide respirators to a worker below NowCast PM_{2.5} of 55.5µg/m³ (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 respirator 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 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

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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.
9. To facilitate two way communications:
The Captain (or Out of Class Officer) shall advise staff of current or predicted poor air qualities during shift meetings
The Division Chiefs, Assistant Chief and Fire Chief shall download the Washington Clean Air app on work phones and watch for poor quality air alerts. All staff are encouraged to download the app and set alerts to phones
When the 820 is alerted to poor air quality threshold via technology, media or staff, the following shall occur:
- a) All staff shall be notified of poor air quality
 - b) All members shall don N95 or P100 or K95 (in the case of N95 shortage) masks while:
 - i. Doing non firefighting activities outdoors
 - Examples: Truck checks, Lawn care, Hose testing
 - ii. In unfiltered areas
 - Examples: Bay or Shop
 - iii. Non arduous training activities
 - Examples: Extrication training, low intensity walk throughs
 - iv. Driving in vehicles without a filter air conditioned cab

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- Examples: Engines without air conditioning and windows are down
 - v. While operating on EMS calls outdoors or in an unfiltered area
 - c) Members may not do non-emergency arduous work outdoors, including PT
 - d) Members may not operate a vehicle during non-emergencies with windows down if operating a vehicle with filtered air systems
 - e) Members are exempt from this procedure while engaged in active wildland or structure firefighting
 - f) Arduous training shall be rescheduled until air quality improves

All staff shall be provided this procedure as training annually.