UNLV BUSINESS AFFAIRS
Risk Management & Safety

WILDFIRE SMOKE GUIDANCE FOR EMPLOYEES

SCOPE

This document is intended to provide guidance for UNLV employees who might need to work outdoors for one hour or more during periods of high wildfire smoke activity. This is not intended to apply to workers who primarily are located indoors. It is also not intended to serve as guidance for when University teaching, research, or work activities should be suspended or curtailed; such guidance should come from the Clark County Division of Air Quality, or other local and state authorities.

INTRODUCTION

Wildfire smoke is a complex mixture of gases and particles from burning vegetation and other materials, and a frequently generated pollutant in the Western and Southwestern United States. As a wildfire burns, different compounds are released in the smoke, such as carbon monoxide, carbon dioxide, hydrocarbons, benzene, acrolein, aldehydes, and fine particulate matter with mean diameter of 2.5 micrometers or less (commonly known as $PM_{2.5}$). The composition and concentration of wildfire smoke can change very quickly depending on environmental factors such as wind, fire behavior, and the type of vegetation burning. Wildfire smoke can result in health issues, especially for the elderly, pregnant women, and people with heart or respiratory conditions. Symptoms of exposure can include burning eyes, coughing, runny nose, chest pain or discomfort, dizziness, and irregular heart rhythms.

The US Environmental Protection Agency (EPA), with the support of state and local level agencies such as the Nevada Division of Environmental Protection and the Clark County Division of Air Quality, maintains an extensive network of monitoring sites where real-time air quality information is collected. This information is made available to the public at multiple sites such as https://www.airnow.gov/

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$PM_{2.5}$

- If the potential for wildfire smoke exposure exists, the employer shall use https://www.airnow.gov or other websites/apps that provide up-to-date AQI data, at the start of each shift and periodically (at least hourly) thereafter.

Communication and Training

- The employer shall communicate wildfire smoke hazards to employees in a language and manner readily understandable. Communication must include the current AQI for $PM_{2.5}$, protective measures available to employees to reduce wildfire smoke exposures, how to recognize worsening air quality, and adverse symptoms that might result from wildfire smoke exposures.
- The employer shall provide employees with effective training and instruction, in a language and manner readily understandable. The information in Appendix A to this guidance shall be provided at a minimum.

Engineering and Administrative Controls

- Where feasible, engineering controls should be considered. These could include moving work to enclosed buildings, structures, or vehicles where the air is filtered.
- Administrative controls must also be considered, such as relocating work to a location

- For outdoor workers voluntarily wearing filtering facepiece (e.g. N95 disposable) respirators during a wildfire smoke impact event, there will not be an expectation that employees must receive fit testing, medical evaluations, or training (other than the provision of Appendix A information) prior to wearing the respirator. In all other circumstances, the expectations of voluntary use spelled out in 29 CFR 1910.134(c)(2) (link: https://www.osha.gov/laws-

APPENDIX A to the UNLV WILDFIRE SMOKE GUIDANCE FOR EMPLOYEES

(source: California Code of Regulations, 5141.1, Appendix B, online at https://www.dir.ca.gov/title8/5141_1b.html)

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 $PM_{2.5}$ because it has a diameter of 2.5 micrometers or smaller.

The Right to Obtain Medical Treatment Without Fear of Reprisal

Employers 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 sm3 (x)8 (x8i 467.00.

plumes. You can also visit the website of the Clark County Division of Air Quality. Employees who do not have access to the internet can contact their employer for the current AQI. The EPA website enviroflash.info can transmit daily and forecasted AQIs by text or email for particular cities or zip codes.

The Requirements of the UNLV Wildfire Smoke Guidance for Employees

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 $PM_{2.5}$ is 151 or more, the employer is required to:

- Check the current AQI at the start of each shift and periodically thereafter.
- Provide training to employees.
- Lower employee exposures.
- Provide respirators and encourage their use.

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:

_____

_____

The Employer's Methods to Protect Employees from Wildfire Smoke

Employers shall act to protect employees when the current AQI for $PM_{2.5}$ is 151 or greater. Examples of protective methods include:

- Locating work in enclosed structures or vehicles where the air is filtered.
- Changing procedures such as moving workers to a place with a lower current AQI for $PM_{2.5}$.
- Reducing work time in areas with unfiltered air.
- Increasing rest time and frequency, and providing a rest area with filtered air.
- Reducing the physical intensity of the work to help lower the breathing and heart rates.

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The employer's control system at this worksite is: _____
_____

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 $PM_{2.5}$ is less than 151, to provide additional protection.

When the current AQI for $PM_{2.5}$ 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, except in emergencies. A respirator should be used properly and kept clean.

The following precautions shall be taken:

- Employers shall select respirators certified for protection against the specific air contaminants at the workplace. Respirators must be certified by NIOSH, the National Institute for Occupational Safety and Health of the U.S. Center for Disease Control and Prevention. 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).
- Surgical masks or items worn over the nose and mouth such as scarves, T-shirts, and bandanas 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.
- Read and understand the manufacturer's instructions on the respirator's use, care, and replacement, along with any warnings regarding the respirator's limitations. If the respirator is reusable, read and understand the instructions for cleaning and maintenance. The manufacturer's instructions must be followed except for medical evaluations, fit testing, and shaving of facial hair, which are recommended but not required for voluntary use of filtering facepiece respirators.
- 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.
- Employees should keep track of their respirator so that they do not mistakenly use someone else's respirator.
- Employees who have a heart or lung problem should ask their health care provider before using a respirator.

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How to Properly Put on and Use the Respirators Provided by the Employer