

Wildfire Smoke Program

Responsible Administrator: UC Riverside, Environmental Health & Safety, Industrial Hygiene

Reviewed: October 2024

Summary:

This program outlines the policy and procedures related to protocols developed by the University of California Office of the President Systemwide Air Quality Protocol Working Group (Appendix B) and the CalOSHA regulation on wildfire smoke that are administered through the Environmental Health and Safety (EHS) Department.

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1.0 Program Description

This program provides campus response actions to wildfire smoke events that negatively impact air quality in a manner consistent with the UCOP Working Group [protocol University of California Office of the President Systemwide Air Quality Protocol Working Group \(Appendix B\)](#) and complies with Title 8 of the California Code of Regulations, Section 5141.1 Protection from Wildfire Smoke.

The program aims to address the following elements:

- Wildfire Smoke Regulation
- Air Quality Monitoring
- Public Health and Science-based Decision Making
- Operational Curtailment
- Location Response Operations
- Crisis Communications

2.0 Scope

2.1 This program applies to workplaces where:

The current Air Quality Index (current AQI) for PM2.5 is 151 or greater, regardless of the AQI for other pollutants; and where UC Riverside should reasonably anticipate that employees may be exposed to wildfire smoke.

2.2 Exemptions to this program are workplaces and operations that:

- Are enclosed buildings or structures in which the air is filtered by a mechanical ventilation system. UC Riverside must be able to ensure that windows, doors, bays, and other openings are kept closed, except when it is necessary to open doors to enter or exit.
- Are enclosed vehicles in which the air is filtered by a cabin air filter. UC Riverside must be able to ensure that windows, doors, and other openings are kept closed, except when it is necessary to open doors to enter or exit the vehicle.
- 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 levels at the worksite in accordance with 8 CCR 5154.1 [Appendix A- Template of EHS-generated campuswide message](#), as demonstrated by UC Riverside.
- Employees are exposed to a current AQI for PM2.5 of 151 or greater for a total of one hour or less during a shift.

2.3 Other

UC Riverside Non-employees, such as students and campus visitors, may also be subject to elements of the program related to Operational Curtailment, Location Response Operations, and Crisis Communications.

3.0 Definitions

- **Current Air Quality Index** - (Current AQI) - The method used by the U.S. Environmental Protection Agency (U.S. EPA) to report air quality on a real-time basis.
- **NIOSH** - The National Institute for Occupational Safety and Health of the U.S. Centers for Disease Control and Prevention.
- **PM2.5** -Solid particles and liquid droplets suspended in air, known as particulate matter, with an aerodynamic diameter of 2.5 micrometers or smaller.
- **Clarity** - A community online system of PM (10, 2.5, 1.0) low-cost sensors measuring particulate matter.
- **Wildfire Smoke** - Emissions from fires in “wildlands,” (defined as sparsely populated geographical areas covered primarily by grass, brush, trees, crops, or combination thereof), or in adjacent developed areas.

4.0 Responsibilities

4.1 Environmental Health and Safety (EHS) Is responsible for:

- Monitoring air quality and tracking the Current AQI through continuous observation of the Clarity system or similar units installed on the campus grounds
- Sending campuswide communication regarding the Current AQI to include the applicable response actions as distributing the appropriate personal protective equipment, if assigned to be the distribution point. EH&S will oversee compliance with the campus Respiratory Protection Program at this time.

- In addition, EH&S will work with the various campus partners and stakeholders to develop and implement a response action plan

4.2 Office of Emergency Management is responsible for:

- Activating the UC Riverside Emergency Management Plan
- Working with the various campus partners and stakeholders to develop and implement a response action plan

5.0 Program Components

5.1 Wildfire Smoke Regulation

In the event of a wildfire occurrence that may impact UC Riverside, current AQI tracking is initiated pursuant to this program. When AQI thresholds identified by 8 CCR 5141.1 and the UCOP Working Group University of California Office of the President Systemwide Air Quality Protocol Working Group (Appendix B) are reached, all applicable response actions as stated in the regulation and protocol are implemented.

5.2 Air Quality Monitoring

Continuous outdoor and indoor air quality monitoring are performed by EH&S for the duration of the wildfire event, until such a time when the event no longer poses a health impact to the UC Riverside community, as determined by the key decision makers identified at the inception of the response action.

Outdoor air quality monitoring is accomplished through use the Clarity units installed within the campus property. Data from other privately-owned Clarity units may also be consulted for determining a response action. Data may also be derived from instruments similar to such as PurpleAir, which is another sensor that provides AQI information.

Indoor air quality monitoring is accomplished using an Industrial Hygiene instrument suitable for such function. At a minimum, the instrument must have the ability to measure PM2.5. The need and sampling strategy for collecting indoor air quality data are at the discretion of the Industrial Hygienist.

5.3 Public Health and Science-Based Decision Making

The AQI-Based Decision Making Matrix developed by the UC Working Group is the default reference for determining a consistent approach to wildfire smoke events. This matrix, found in the UCOP Working Group protocol document, contains both required and recommended actions for each AQI category (including identifying AQI thresholds for curtailing operations and cancelling classes).

5.4 Operation Curtailment

Operational curtailment is a decision made at the highest level of leadership, which is beyond the scope of this program. Nonetheless, input from EH&S and other campus partner, regulatory thresholds, air quality monitoring data, and the preceding decision matrix all contribute to providing important reference points and direction.

5.5 Location Response Operations

Similar to operational curtailment, this program element is beyond the scope of this program as it is typically triggered by the activation of the Emergency Operations Plan administered by Emergency Management.

5.6 Crisis Communications

During a wildfire smoke event, there will be various levels of crisis communication occurring between various campus partners and stakeholders. One fundamentally key communication strategy is the message originated by EH&S to report the current AQI and the commensurate recommended activity.

Appendix A- Template of EHS-generated campuswide message shows a template of the EHS-generated message that is sent campuswide.

6.0 Reporting Requirements

Reporting requirements will depend on the level of activation of the Emergency Operations Plan. The Plan determines the path and the frequency of the reporting, and all the other details to accomplish effective notifications.

7.0 References and Appendices

California Code of Regulations, [Title 8, Section 5141.1 Protection from Wildfire Smoke](#)

Appendix A- Template of EHS-generated campuswide message

Appendix B- University of California Wildfire Smoke and Air Quality A report to University of California President Janet Napolitano

Appendix A

Template of the EHS-generated messages

Email #1: Use for Good or Moderate AQI

The South Coast Air Quality Management District has not issued a smoke advisory for our area regarding the INSERT FIRE NAME. Currently, the air quality index for our area is INSERT 'good' or 'moderate'.

Environmental Health and Safety will continue to monitor the air quality on campus and send additional information if the situation changes. For more information on the Air Quality Index and current fire information, please visit www.ehs.ucr.edu.

Email #2: Use for Unhealthy for Sensitive Groups or Unhealthy AQI

The South Coast Air Quality Management District has issued a smoke advisory for our area regarding the INSERT FIRE NAME. Currently, the air quality index for our area is INSERT 'Unhealthy for Sensitive Groups' or 'Unhealthy'.

Everyone should avoid vigorous outdoor or indoor exertion. People with respiratory or heart disease, older adults, and children should remain indoors. Keep windows and doors closed or seek alternate shelter. Run your air conditioner if you have one and keep the fresh air intake closed and the filter clean to prevent bringing additional smoke inside.

Environmental Health and Safety will continue to monitor the air quality on campus and will coordinate with UC Riverside Office of Emergency Management to notify groups that may be affected by the air quality.

For more information on the Air Quality Index and current fire information, please visit www.ehs.ucr.edu.

Email #3: Use for Very Unhealthy or Hazardous AQI (If campus remains open)

The South Coast Air Quality Management District has issued a smoke advisory for our area regarding the INSERT FIRE NAME. Currently, the air quality index for our area is INSERT 'Very Unhealthy' or 'Hazardous'.

Everyone should avoid vigorous exertion and limit outdoor exposure. Keep windows and doors closed or seek alternate shelter. Run your air conditioner if you have one and keep the fresh air intake closed and the filter clean to prevent bringing additional smoke inside. If you are a student impacted by the wildfires, please notify your instructors if you are going to miss class. If you are unable to contact your professors before class, please let them know as soon as possible. Faculty are encouraged to be as flexible as possible with such students.

If you are an employee who is unable to travel to work due to evacuation, road closures or other emergencies related to a fire, please notify your supervisor as soon as possible to discuss time off.

Supervisors should make every effort to accommodate the needs of affected staff. Please direct any questions about leave requests to the appropriate human resources business partner.

Appendix B

University of California Wildfire Smoke and Air Quality

A report to University of California President Janet Napolitano September 2019

For more information on the UCR / UCOP Smoke and Wildfire Program, please review the [University of California Wildfire Smoke and Air Quality – A report to University of California President Janet Napolitano September 2019](#)