Kaiser Permanente Northern California Manual for Wildfire: Air Quality Playbook

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This playbook was written by the KP NCAL Regional Emergency Management Team, KP NCAL Regional Safety liaisons, KP NCAL Regional Support Services, KP NCAL Occupational Medicine, KP NCAL Employee Health, KP National Environmental Health and Safety, KP HealthCare Continuity Management

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Introduction and Purpose

Wildfire has become increasingly common and increasingly destructive in California. It was described by former Governor Jerry Brown as “the new abnormal.” It is likely that climate change will intensify wildfire occurrences over the next few decades.

As wildfire assumes an increasingly important position on the Kaiser Permanente Northern California Hazard Vulnerability Analysis, it is important to actively study, plan and prepare for its potential impact on Kaiser Permanente facilities and populations. This manual describes some aspects of wildfire preparedness -- the management, preparation, and response to poor air quality caused by California wildfires.

Regional EH&S is the lead to provide guidance to monitor and support air quality solutions in Northern California. This playbook has been developed by Regional Emergency Management in consultation with KP National and Regional EH&S and the state/county Health Department as appropriate to address disaster situations and, in collaboration with Kaiser Permanente executive leadership to determine which aspects of the Regional Air Quality Playbook should be activated and deployed in any particular disaster situation.

Photo Credit: Matt Kiyoi, RN

Determination of the Air Quality Index (AQI for PM2.5)

How To Determine the Air Quality Index

In accordance with Cal/OSHA Reg 5141.1(c)1&3, the air quality index will be primarily determined through the air quality index rating per the Environmental Protection Agency, which can be accessed at the **U.S. Air Quality Index:** https://airnow.gov/

The following resources are available for more information on air quality:

U.S. Forest Service Wildland Air Quality Response Program: https://sites.google.com/firenet.gov/wfaqrp-external/home

Air Resources Board: https://www.arb.ca.gov/aqmis2/MainPgLinks/aqi.php

Local air pollution control districts: Bay Area Air Quality Management District, San Joaquin Valley Air Quality Management District, Northern Sonoma Air Quality Management District, Yolo/Solano Air Pollution Control District, Placer County Air Pollution Control District, Sacramento Metro Air Quality Management District, Monterey Bay Air Quality Management District.

The protocols described in this playbook pertain to situations in which the air quality index will change as a result of poor air quality from wildfires.

Air Quality Index (AQI) Values	Levels of Health Concern	Colors
When the AQI is in this range:	*..air quality conditions are:*	*...as symbolized by this color:*
0 to 50	Good	Green
51 to 100	Moderate	Yellow
101 to 150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Each category corresponds to a different level of health concern. The six levels of health concern and what they mean are:

- "Good" AQI is 0 to 50. Air quality is considered satisfactory, and air pollution poses little or no risk.
- "Moderate" AQI is 51 to 100. Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people. For example, people who are unusually sensitive to ozone may experience respiratory symptoms.
- "Unhealthy for Sensitive Groups" AQI is 101 to 150. Although general public is not likely to be affected at this AQI range, people with lung disease, older adults and children are at a greater risk from exposure to ozone, whereas persons with heart and lung disease, older adults and children are at greater risk from the presence of particles in the air.
- "Unhealthy" AQI is 151 to 200. Everyone may begin to experience some adverse health effects, and members of the sensitive groups may experience more serious effects.
- "Very Unhealthy" AQI is 201 to 300. This would trigger a health alert signifying that everyone may experience more serious health effects.
- "Hazardous" AQI greater than 300. This would trigger a health warnings of emergency conditions. The entire population is more likely to be affected.

Frequency of Measurement of the Air Quality Index (AQI for PM2.5)

If the air quality surrounding one or more Kaiser Permanente facilities becomes “unhealthy” or worse as determined by the air quality index, the medical center must have an established system to check and document the air quality index as required by Cal/OSHA section 5141.1:

- *The employer shall determine employee exposure to PM2.5 for worksites before each shift and periodically thereafter, as needed to protect the health of the employee.*
- KP NCAL recommends checking the AQI for PM2.5 in the beginning, middle, and later part of shift; examples include between 6-8am, 10-noon, and 3-5 pm; and night shift as applicable

The medical center must have designated individuals who will check the AQI for PM2.5 according to Cal/OSHA section 5141.1

- Examples of designated individuals include: safety personnel, engineering personnel, administrator-on-call

Medical Center Communication Plan and System

Medical Center Communication Plan and System

If the air quality surrounding one or more Kaiser Permanente facilities becomes “unhealthy” or worse as determined by the air quality index, the medical center, as required by Cal/OSHA section 5141.1, ***shall*** 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.

- Examples of a communication system include: a Send-All email to all staff of the affected medical center(s), AQI for PM2.5 posted on a KP intranet site, AQI for PM2.5 update in the daily huddle, AQI for PM2.5 update to department managers who then cascade the information to employees
- The AQI should be communicated to employees *before each shift and periodically thereafter*
- Communications must include encouraging employees to inform employer of worsening air quality and any adverse symptoms that may be the result of wildfire smoke exposure

Medical Center Communication Plan and System Cont'd

The communication given to employees must include:

- The current AQI for PM2.5
- Protective measures available to employees to reduce their wildfire smoke exposures
- Request to employees to inform a supervisor of worsening air quality or any adverse symptoms that may be the result of wildfire smoke exposure such as asthma attacks, difficulty breathing, and chest pain *without fear of reprisal.*
- Talking points regarding the use of N95 respirators
- See Appendix A for examples of standardized medical facility memo and talking points to all medical center staff

The communication system must be documented in Cal/OSHA Appendix B when this is distributed to employees.

Standardized "Talking Points" Memos

The Regional Emergency Management Team will:

- Maintain and update standardized "Talking Points" memo's regarding N95 respirator facts, methods to avoid smoke exposure, etc.
- Medical facilities are encouraged to use these standardized memo's in communications with their staff or when distributing N95 respirators to the public.
- See Appendix A of this document for examples of Talking Points
- See Appendix E for additional wildfire smoke factsheets

Mitigation of Poor Air Quality

Engineering and Administrative Controls and Control by Respiratory Protective Equipment

Engineering Controls: If the air quality surrounding one or more Kaiser Permanente facilities becomes "unhealthy" or worse, as determined by the air quality index for PM2.5, the medical facilities must implement Engineering Controls as described in Cal/OSHA section 5141.1: *The employer shall reduce employee exposure to PM2.5 to less than a current AQI of 151 by engineering controls whenever feasible, for instance by providing enclosed buildings, structures, or vehicles where the air is filtered.*

- For outdoor workers: Implement feasible modifications to the workplace to reduce exposure. Examples include providing enclosed buildings or vehicles for employees to work in, where the air is filtered.

When the AQI for PM is "unhealthy" or worse, medical centers will review and assess the following mitigation options with the Director of Facilities, Chief Engineer, and NFS Team Manager to lessen exterior air quality effects:

- Consider restriction of entry points to limit the intake of outside air. Designated entry points must remain unobstructed for egress. Entry points can be cordoned off/closed but must remain unlocked as an egress option.

Engineering and Administrative Controls and Control by Respiratory Protective Equipment Cont'd

- Keep doors, windows, bays and other entry points closed when not in immediate use to minimize contamination by unfiltered outdoor air.
- Increase cleaning frequency of facility entry points by EVS to decrease potential of particulate entering the facility. Cleaning frequency should be determined by the facility and based on local conditions.
- Consider placement of mobile air scrubbing units at high volume facility entry points and areas of high air movement, such as elevator foyers. Engage local CPFC and NFS Team Manager on options and procurement.
- Consult with local Chief Engineer regarding HVAC fresh air vs. recycled air adjustments.
- Consult with local Chief Engineer regarding the placement of charcoal filter overlay on the filters of facility Air Handling Units.
- Communicate facility mitigation efforts to Regional Emergency Management for tracking and inclusion in regional air quality mitigation report to NCAL senior leadership.

Administrative Controls. *Whenever engineering controls are not feasible or do not reduce employee exposures to PM2.5 to less than a current AQI of 151,* the medical facilities must implement Administrative Controls as described in Cal/OSHA section 5141.1: *the employer shall implement administrative controls, if practicable, such as relocating work to a location where the current AQI for PM2.5 is lower, changing work schedules, reducing work intensity, or providing additional rest periods.*

- For outdoor workers: Implement practicable changes to work procedures or schedules. Examples include changing the location where employees work to one with a lower AQI, reducing the amount of time they work outdoors, reducing work intensity, and providing additional rest periods.

Control by Respiratory Protective Equipment: Control by Respiratory Protective Equipment should be undertaken after implementing Engineering and Administrative Controls to the extent feasible to reduce exposures. To comply with Cal/OSHA requirements section 5141.1:

- **When the AQI for PM2.5 exceeds 150 and is less than 501**: medical facilities must provide Cal/OSHA "Appendix B" to 5141.1 and offer NIOSH-approved respirators such as N95s to outdoor employees. Use of the NIOSH-approved N95 respirator is voluntary for outdoor workers between AQI for PM2.5 151-500. Employees should be strongly encouraged to use the respirators. Respirators shall be cleaned (as appropriate), stored, maintained and replaced so that they do not present a health hazard to the users during a shift. A new N95 respirator should be issued to each outdoor worker for each day that the AQI is exceeds 150.
    - Medical Evaluation and Fit-testing:
        - ❖ When N95 respirators are provided and the AQI for PM2.5 is below 500, fit testing and medical evaluation are not required.

- ❖ If half or full-facepiece elastomeric respirators or powered air-purifying respirators (PAPRS) are provided for protection of outdoor workers from wildfire smoke, voluntary users must be provided a medical evaluation for respirator use, sufficient training and processes to ensure the respirator is cleaned, stored and maintained so that its use does not present a health hazard to the user, and Appendix B of 5141.1. Fit testing is not required when the AQI for PM2.5 is below 500.

- Training and Instruction: At AQI for PM2.5 between 151-500, KP NCAL must provide its outdoor employees with effective training and instruction: per Cal/OSHA 5141.1, ***the employer shall provide employees with effective training and instruction. At a minimum, this shall contain the information in Appendix B.***
  - ❖ When the AQI for PM2.5 is between 151-500, outdoor workers must be provided with Appendix B of Cal/OSHA 5141.1. Appendix B has 2 sections that must be filled in by the distributing facility:
    - The employer's communication system is: _____
    - The employer's control system at this worksite is: _____ _

- **When the AQI for PM2.5 is 501 or greater:** Medical facilities must provide Cal/OSHA "Appendix B" of 5141.1 and provide NIOSH-approved N95 respirators to outdoor employees to achieve PM2.5 levels inside the respirator corresponding to a current AQI of 150 or less. Use of the NIOSH-approved N95 respirator is mandatory for outdoor workers when AQI for PM2.5 is 501 or greater. Medical facilities must provide a medical evaluation, training and fit testing for employees as mandated by Cal/OSHA. A new N95 respirator should be issued to each outdoor worker for each day that the AQI is exceeds 150.

AQI Hierarchy Control Grid for KP NCAL: see grid below (also located in Appendix F) for recommendations on standardized Engineering and Administrative Controls and Respirator Use for **outdoor workers**:

Standardized Recommendations for Outdoor Workers in KP NCAL During Poor Air Quality Due to Wildfire Smoke:

Outdoor workers:
KP staff: Groundskeepers (including Gardeners), Stationery Engineers (Engineering), Construction (Capital Projects Facilities Construction), Warehouse Storekeepers (Distribution Centers), Single Point of Entry workers
KP clinical staff: staff working in outdoor swabbing/testing or vaccination stations
KP contractors: Security Officers, Parking Lot Attendants, Shuttle Bus Drivers, Delivery Drivers

General principles:
Exposure to poor AQI increases with level of exertion. Staff with more physically active work will experience greater exposure during poor AQI than staff with more sedentary work.

Air Quality Index (AQI) Values	Respirator Use	Hierarchy Controls
GOOD 0 to 50	**Respirator:** None	**Document Required:** None **Actions:** None
MODERATE 51 to 100	**Respirator:** N95 (upon request)	**Document Required:** Appendix B to any outdoor staff who requested respirator *Note: N95 use in this AQI range is at the discretion of the staff member.* *Note: Appendix B must be completed with facility-specific information before distribution to staff.* **Actions:** • Offer N95 and Appendix B to outdoor workers who request an N95 • Monitor Air Quality Index (AQI) via www.AirNow.gov or via facility monitor • Check AQI at beginning, middle, and later part of shift; Examples include between 6-8am, 10-noon, and 3-5 pm; and night shift as applicable
UNHEALTHY FOR SENSITIVE GROUPS 101 to 150	**Respirator:** N95 (KP will proactively offer to all outdoor staff)	**Document Required:** Appendix B to any outdoor staff who received a respirator *Note: N95 use in this AQI range is at the discretion of the staff member.* *Note: Appendix B must be completed with facility-specific information before distribution to staff.* **Actions:** • Offer N95 and Appendix B to all outdoor workers • Monitor Air Quality Index (AQI) via www.AirNow.gov or via facility monitor • Check AQI at beginning, middle, and end of shift; between 6-8am, 10-noon, and 3-5 pm; and night shift as applicable • Provide communication for outdoor staff to contact manager on duty if they are experiencing symptoms from poor AQI • Provide medical center leadership memo communication about air quality (including talking points)
UNHEALTHY 151 to 200	**Respirator:** N95 (employer required to offer)	**Document Required:** Appendix B to all outdoor staff *Note: N95 use in this AQI range is at the discretion of the staff member.* *Note: Appendix B must be completed with facility-specific information before distribution to staff.* **Actions:** • Offer N95 and Appendix B to all outdoor workers *Note: staff may refuse to wear N95 but must be given Appendix B regardless, if not previously distributed* • Follow actions for UNHEALTHY FOR SENSITIVE GROUPS **Other Considerations:** • Move work to enclosed structures, if feasible • Relocate employees to a location with lower AQI, if feasible

		• Reduce work time in outdoor setting/Reduce length of outdoor shifts, if feasible • Increase rest time and provide a rest area with filtered air (KP Occupational Medicine recommends 15 minutes of rest in rest area every 2 hours) • Reduce physical intensity of work, if feasible • Alternate workers in outside shifts, if feasible • *Notify affected staff, department managers, and medical center leadership of any operational changes related to the AQI*
VERY UNHEALTHY 201 to 300	**Respirator:** N95 (employer required to offer)	**Document Required:** Appendix B to any outdoor staff who receives a respirator **Actions:** • Follow actions for UNHEALTHY FOR SENSITIVE GROUPS **Other Considerations:** • Follow actions for UNHEALTHY • Consider pausing or moving outdoor operations indoors until air quality improves • Notify Regional Command Center of decision
HAZARDOUS 301 to 500	**Respirator:** N95 (employer required to offer; 500 +, respirator required)	**Pause or move all outdoor operations indoors until air quality improves** • Consult with the Regional Command Center for guidance *Note: an exception may be made for emergencies or critical operations, such as critical engineering operations*

N95 Respirator Distribution Protocol

Types of N95 Respirators

1. **Standard N95 Respirators:**
   - Designed to protect against airborne particulate matter: dust and small particles
   - Designed for jobs where sterility and fluid resistance are not a concern
2. **Surgical N95 Respirators:**
   - Designed to protect against particulate matter (e.g. dust and mist)
   - "Fluid-resistant" similar to a surgical mask
   - Functions also as surgical mask and can be used where sterility is a concern

NOTE: Surgical masks are not respirators. They will not protect the wearer from inhaling airborne contaminants.

NOTE: N95 respirators do not protect against gases or vapors produced by wildfires or other sources.

Outdoor Staff: N95 Respirator Distribution

- Outdoor workers
  - KP staff: Groundskeepers (including Gardeners), Stationery Engineers (Engineering), Construction (Capital Projects Facilities Construction) Warehouse Storekeepers (Distribution Centers), Single-Point-Of-Entry workers
  - KP clinical staff: staff working in outdoor swabbing/testing or vaccination stations
  - KP contractors: Security Officers, Parking Lot Attendants, Shuttle Bus Drivers, Delivery Drivers

- When outdoor workers cannot be diverted away from poor air quality via engineering or administrative controls and when air quality is "unhealthy" or worse:
    - When the AQI for PM2.5 is greater than 150 and less than 501: Outdoor staff members must be provided with "Appendix B" of Cal/OSHA Section 5141.1 and offered a NIOSH-approved N95 respirators. These outdoor workers should be encouraged to use respiratory protection. When AQI for PM2.5 is greater than 150 and less than 501, use of an N95 respirator is voluntary. See Medical Facility Toolkit section above for additional information regarding respirator requirements.
    - When the AQI for PM2.5 is greater than 500: Outdoor staff members must be provided with "Appendix B" of Cal/OSHA Section 5141.1 and given a NIOSH-approved N95 respirator to achieve PM2.5 levels inside the respirator corresponding to a current AQI of 150 or less. Use of the NIOSH-approved N95 respirator is mandatory for outdoor workers when AQI for PM2.5 is 501 or greater. Medical facilities must provide a medical evaluation, training and fit-testing.
        - ❖ Fit-testing should occur via the usual medical center process, which may be through the Employee Health or Safety departments. These departments should anticipate increased volume during poor air quality events and have a protocol in place to address higher volume

Indoor Staff: N95 Respirator Distribution Voluntary

- **Mask and N95 usage within KP NCAL facilities should be reserved for situations in which it is clinically indicated for infection prevention**. The AQI within KP NCAL facilities is good even during a wildfire smoke event—**additional masking or N95 usage is not indicated for air quality purposes while *inside* KP NCAL facilities.**
- Indoor workers who request an N95 respirator for protection against poor air quality when they are ***outside*** of a KP NCAL facility may be give one NIOSH-approved N95 respirator and the instructions in Appendix C
- These staff members must also receive "Appendix D" of Cal/OSHA 5144 as a handout with their N95 respirator which is found in Appendix D of this document
- Use of the N95 respirator by indoor staff (for use when they are ***outside*** of a KP NCAL facility) is voluntary
- Fit-testing is not required when distributing N95 respirators to staff for whom N95 use is voluntary. If staff member requests fit-testing, he/she should follow the usual medical center process to obtain fit-testing
    - ❖ Note: If staff member is providing care, or entering areas of respiratory isolation, N95 respirators with proper fit testing should be utilized per standard infection control practice and Cal/OSHA respiratory protection requirements

- Employers must tell these employees that:
    - The respirator will provide some but not complete protection against the particles in smoke.
    - A respirator that has not been fit-tested may not provide the maximum level of protection.
    - Disposable filtering facepiece respirators (includes N95s, P95s, R95s, P100s, etc.) do not protect against gases or vapors.

- Although a medical evaluation is not required, employees are advised to consult their doctor about potential exposures to smoke and respirator use, particularly if they have certain health problems such as respiratory or heart conditions.

Members/Visitors: N95 Respirator Distribution Voluntary

- All members and visitors without infectious disease requesting N95 respirator
- KP facility will distribute one N95 respirator per member/visitor upon request if the supply of N95 respirators supply is not constrained. If there is concern that the supply of N95 respirators is constrained, the medical facility's N95 respirators should be reserved for clinical use and an alternative respirator will be provided to members/visitors.
- Fit-testing is not required when distributing N95 respirators to patient/visitor for whom N95 use is voluntary
- Talking Points memo should be given with distribution of N95 respirator (see Appendix A of this document)

Facility N95 Respirator Escalation Plan

All medical facilities should be prepared for increased usage and demand for N95 respirators during a poor air quality event. In addition, PAPR-only facilities should have a clear protocol for accessing N95 respirators in the event of increased demand. N95 respirator supply may be further constrained during periods of increased demand for infection prevention purposes, such as during a pandemic or infectious outbreak.

- Facilities will work with their usual supply chain to obtain more N95s
- PAPR-only facilities will follow escalation protocol to obtain more N95 respirators
- Consider facility plan to sequester/manage inventory and prevent disappearances
    - Ex: N95s kept by House Supervisor at night or Safety department during day
- Medical facility will notify Regional Emergency Management Team if having difficulty obtaining N95 respirators through usual supply chain
- Regional Emergency Management Team will work with National Supply Chain to access regional stores of N95 respirators

Online Resources

Kaiser Permanente Northern California Regional Emergency Management Team SharePoint Site:
< https://sites.sp.kp.org/teams/ncale/SitePages/Home.aspx>

EPA Air Now: Maintained by the Environmental Protective Agency: contains current and forecast air quality information.
https://airnow.gov/

Cal/OSHA Emergency Regulation on Protection from Wildfire Smoke:
https://www.dir.ca.gov/dosh/doshreg/Protection-from-Wildfire-Smoke/Wildfire-smoke-emergency-standard.html

Cal/OSHA Protecting Outdoor Workers Exposed to Smoke from Wildfires: https://www.dir.ca.gov/dosh/wildfire/worker-protection-from-wildfire-smoke.html

Cal/OSHA Appendix B to Section 5141.1. Protection from Wildfire Smoke Information to Be Provided to Employees (Mandatory): https://www.dir.ca.gov/Title8/5141_1b.html

Cal/OSHA Section 5141.1: Protection from Wildfire Smoke: https://www.dir.ca.gov/title8/5141_1.html

Cal/OSHA Strategies for Optimizing the Supply of N95 Respirators for Wildfire Smoke Events During Respirator Shortages: https://www.dir.ca.gov/dosh/wildfire/Strategies-Optimizing-Supply-N95-Respirators-Wildfires.pdf

California Air Resources Board: https://www.arb.ca.gov/aqmis2/MainPgLinks/aqi.php

U.S. Forest Service Wildland Air Quality Response Program: https://sites.google.com/firenet.gov/wfaqrp-external/home

APPENDIX A: Medical Center Air Quality Communications Template and N95 Respirator Talking Points

Email Advisory to Medical Center staff: Air Quality Advisory and Tips to Avoid Smoke Exposure (intended audience: medical center employees):

Air quality is expected to be poor throughout [Insert Location], including cities where our medical center(s) are located, due to wildfire smoke from the [Insert Name of Fire]. The air quality index is currently: [Insert Number]. Below is some information to help you avoid smoke exposure.

Air quality inside KP facilities

Some KP buildings are experiencing smoke odor inside. We are doing everything we can to provide the safest possible environment inside our facilities for employees, physicians, patients, and visitors. Our filtration systems are operating normally, and we are monitoring them carefully. Keep in mind that despite the smoke odor, the air quality is most likely better indoors than outdoors.

Here are some steps you can take to avoid smoke exposure

- It is usually preferred to stay indoors with windows and doors closed, and reduce physical activity, if possible.
- Avoid exercising outside or being outside for prolonged periods.
- Set home and car air conditioning units or vent systems to recirculate, rather than drawing from the smoky air outside.
- Individuals with chronic conditions, such as asthma or COPD, should have a plan for how to manage exacerbations and should have an adequate supply of medications on hand.
- If you would like to obtain an N95 respirator, please contact your supervisor to discuss this.
- If you believe that the air quality around you is worsening or you experience any adverse symptoms that may be the result of wildfire smoke exposure such as asthma attacks, difficulty breathing, and chest pain, please inform your supervisor.
- If you think you have a medical emergency, call 911 for assistance.

For further information about respiratory protection and masks, please refer to:
https://www3.epa.gov/airnow/smoke_fires/respiratory-protection-508.pdf

Talking Points about N95 respirators and smoke exposure:

We recommend taking the following steps to minimize your exposure to smoke:

- Minimize all outdoor activities if you see or smell smoke, even if you're healthy
- Children, the elderly, and people with respiratory or heart conditions should be particularly careful to avoid exposure
- Stay indoors as much as possible with doors and windows closed
- Asthmatics should follow their asthma management plan
- Those with heart disease should especially limit their smoke exposure and activity levels since the particulate matter in smoke is a risk factor for heart attacks

Facts about N95 respirators:

- N95 respirators provide some protection because they filter out fine particles in smoke (but not hazardous gases). These respirators should be used mostly by people who have to go outdoors.
- It is harder to breathe through a respirator, so breaks should be taken frequently. Employees should consult their physician before using the N95 if they have a heart or lung problem.
- One-strap paper dust masks or surgical masks do not protect against the fine particles in smoke.
- Don't use bandanas or towels (wet or dry) or tissue held over the mouth and nose. These may relieve dryness but they won't protect your lungs from wildfire smoke.
- N95 respirators should not be placed on infants or small children.
- Self-care tips regarding smoke exposure are available online at: https://lookinside.kaiserpermanente.org/information-air-quality-smoke-exposure.
- These recommendations are consistent with Environmental Protection Agency guidelines on the management of wildfire smoke exposure. More information is available at: https://www3.epa.gov/airnow/smoke_fires/respiratory-protection-508.pdf.

Caution/warning Statements for N95 Respirator Distribution to the Public:

- People with chronic respiratory, cardiac, or other medical conditions that make breathing difficult should check with their healthcare provider before using an N95 respirator.
- To work as expected, an N95 respirator requires a proper fit to your face.

How do I know if I need to wear a respirator?

- People who stay indoors or limit their time outdoors during wildfire emergencies are doing the most effective thing to avoid exposure and may not need to wear a respirator.

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- People who must be outside for extended periods of time in smoky air or an ash-covered area may benefit from using a tight-fitting N95 or P100 respirator to reduce their exposure.
- For people who want to wear a respirator, learning how to select and correctly use the respirator is important for achieving the most protection possible.

How to Use this Type of Respirator

- To get a secure fit, place the respirator over your nose and under your chin, with one strap placed below the ears and one strap above the ears.
- Pinch the metal part of the respirator (if there is one) over the top of your nose so it fits securely.

For more information:

- To learn more about current air quality visit: https://www.baaqmd.gov/about-air-quality/current-air-quality
- To learn more about respirators, visit: https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html
- Infographic about respirators: https://airnow.gov/static/topics/images/epa-infographic-respirator.jpg
- How to put on and remove your respirator: https://www.cdc.gov/niosh/docs/2010-133/pdfs/2010-133.pdf

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APPENDIX B: Cal/OSHA Section 5141.1 "Appendix B"

Appendix B to Section 5141.1. Protection from Wildfire Smoke Information to Be Provided to Employees (Mandatory)

(a) 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 PM2.5 because it has a diameter of 2.5 micrometers or smaller.

(b) 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 such treatment. Employers shall 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.

(c) How employees can obtain the current Air Quality Index (AQI) for PM2.5.

- Various government agencies monitor the air at locations throughout California and report the current AQI for those places. The AQI is a measurement of how polluted the air is. An AQI over 100 is unhealthy for sensitive people and an AQI over 150 is unhealthy for everyone.
- Although there are AQIs for several pollutants, Title 8, section 5141.1 about wildfire smoke only uses the AQI for PM2.5.
- The easiest way to find the current and forecasted AQI for PM2.5 is to go to www.AirNow.gov and enter the zip code of the location where you will be working. The current AQI is also available from the U.S. Forest Service at https://tools.airfire.org/ or a local air district, which can be located at www.arb.ca.gov/capcoa/dismap.htm. Employees who do not have access to the internet can contact their employer for the current AQI. The EPA website www.enviroflash.info can transmit daily and forecasted AQIs by text or email for particular cities or zip codes.

(d) The requirements in Title 8, section 5141.1 about wildfire smoke.

- 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 PM2.5 is 151 or more, the employer is required to:

(1) Check the current AQI before and periodically during each shift.
(2) Provide training to employees.
(3) Lower employee exposures.

(4) Provide respirators and encourage their use.
(e) 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: _____ _____

_____
_____

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

- Employers shall take action to protect employees from PM2.5 when the current AQI for PM2.5 is 151 or greater. Examples of protective methods include:

(1) Locating work in enclosed structures or vehicles where the air is filtered.
(2) Changing procedures such as moving workers to a place with a lower current AQI for PM2.5.
(3) Reducing work time in areas with unfiltered air.
(4) Increasing rest time and frequency, and providing a rest area with filtered air.
(5) Reducing the physical intensity of the work to help lower the breathing and heart rates.
The employer's control system at this worksite is: _____ _____

_____
_____

(g) 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 PM2.5 is less than 151, to provide additional protection.
- When the current AQI for PM2.5 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.
- A respirator should be used properly and kept clean.
- The following precautions shall be taken:

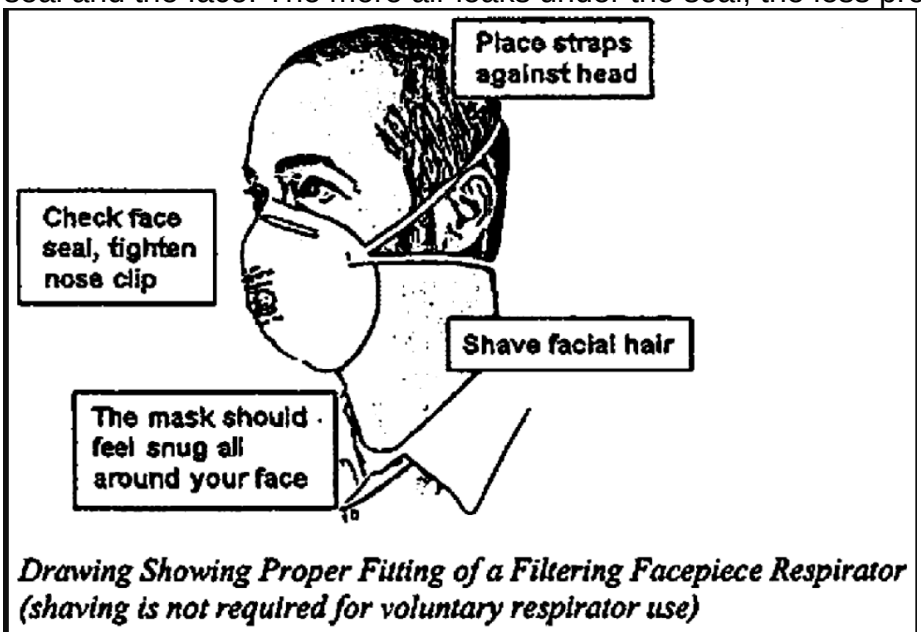
(1) Employers shall select respirators certified for protection against the specific air contaminants at the workplace. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Center for Disease Control and Prevention certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will list what the respirator is designed for (particulates, for example).
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.
(2) 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, although doing so is not required by Title 8, section 5141.1 for voluntary use of filtering facepiece respirators.
(3) 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.
(4) Employees should keep track of their respirator so that they do not mistakenly use someone else's respirator.
(5) Employees who have a heart or lung problem should ask their doctor before using a respirator.

(h) 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:

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

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



Drawing Showing Proper Fitting of a Filtering Facepiece Respirator (shaving is not required for voluntary respirator use)

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.
Note: Authority cited: Section 142.3, Labor Code. Reference: Sections 142.3 and 144.6, Labor Code.

HISTORY

1. New Appendix B filed 7-29-2019 as an emergency; operative 7-29-2019 (Register 2019, No. 31). A Certificate of Compliance must be transmitted to OAL by 1-27-2020 or emergency language will be repealed by operation of law on the following day.
2. New Appendix B refiled 1-16-2020 as an emergency; operative 1-24-2020 pursuant to Government Code section 11346.1(d) (Register 2020, No. 3). A Certificate of Compliance must be transmitted to OAL by 4-23-2020 or emergency language will be repealed by operation of law on the following day.
3. New Appendix B refiled 4-30-2020 as an emergency; operative 6-23-2020 pursuant to Government Code section 11346.1(d) (Register 2020, No. 18). A Certificate of Compliance must be transmitted to OAL by 9-21-2020 or emergency language will be repealed by operation of law on the following day.

APPENDIX C: Instructions for Indoor Workers Receiving an N95 for Voluntary Use

KP may provide N95s to indoor workers for voluntary use at KP facilities when KP believes there is a sufficient supply of N95s to do so.

- The distribution of N95s for this use is not required by Cal/OSHA's Wildfire Smoke Protection Standard- 8 CCR 5141.1. They are being provided simply for worker comfort and convenience.
- If you are going to reuse a N95 for more than one shift we do not recommend reusing it for more than 3 full-time shifts.
- Never allow anyone else to use your N95. A N95 may only be reused by the same worker who wore it initially.
- N95s should be removed and carefully stored in a clean paper bag when not in use.
- Workers should wash their hands before taking off and putting on the N95.
- Storage in a paper bag will allow for evaporation of moisture from the N95 until it is reused.
- The N95 must be discarded if it any time it becomes contaminated, does not fit or function correctly, becomes difficult to breathe through, or is deformed from sweat or wet conditions.

APPENDIX D: Cal OSHA Section 5144 "Appendix D"

Appendix D to Section 5144: (Mandatory)

Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.

2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

4. Keep track of your respirator so that you do not mistakenly use someone else's respirator. [63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

APPENDIX E: Additional Wildfire Smoke Factsheets

Reduce Your Smoke Exposure:
https://www3.epa.gov/airnow/smoke_fires/reduce-your-smoke-exposure.pdf

Protect Your Lungs from Wildfire Smoke and Ash:
https://www3.epa.gov/airnow/smoke_fires/respiratory-protection-508.pdf

Protecting Children from Wildfire Smoke and Ash:
https://www3.epa.gov/airnow/smoke_fires/protecting-children-from-wildfire-smoke-and-ash.pdf

Indoor Air Filtration:
https://www3.epa.gov/airnow/smoke_fires/indoor-air-filtration-factsheet-508.pdf

APPENDIX F: Standardized Recommendations for Outdoor Workers in KP NCAL During Poor Air Quality Due to Wildfire Smoke

Outdoor workers:
KP staff: Groundskeepers (including Gardeners), Stationery Engineers (Engineering), Construction (Capital Projects Facilities Construction), Warehouse Storekeepers (Distribution Centers), Single Point of Entry workers
KP clinical staff: staff working in outdoor swabbing/testing or vaccination stations
KP contractors: Security Officers, Parking Lot Attendants, Shuttle Bus Drivers, Delivery Drivers

General principles:
Exposure to poor AQI increases with level of exertion. Staff with more physically active work will experience greater exposure during poor AQI than staff with more sedentary work.

Air Quality Index (AQI) Values	Respiratory Use	Hierarchy Controls
GOOD 0 to 50	**Respirator:** None	**Document Required:** None **Actions:** None
MODERATE 51 to 100	**Respirator:** N95 (upon request)	**Document Required:** Appendix B to any outdoor staff who requested respirator *Note: N95 use in this AQI range is at the discretion of the staff member.* *Note: Appendix B must be completed with facility-specific information before distribution to staff.* **Actions:** • Offer N95 and Appendix B to outdoor workers who request an N95 • Monitor Air Quality Index (AQI) via www.AirNow.gov or via facility monitor • Check AQI at beginning, middle, and later part of shift; Examples include between 6-8am, 10-noon, and 3-5 pm; and night shift as applicable
UNHEALTHY FOR SENSITIVE GROUPS 101 to 150	**Respirator:** N95 (KP will proactively offer to all outdoor staff)	**Document Required:** Appendix B to any outdoor staff who received a respirator *Note: N95 use in this AQI range is at the discretion of the staff member.* *Note: Appendix B must be completed with facility-specific information before distribution to staff.* **Actions:** • Offer N95 and Appendix B to all outdoor workers • Monitor Air Quality Index (AQI) via www.AirNow.gov or via facility monitor • Check AQI at beginning, middle, and end of shift; between 6-8am, 10-noon, and 3-5 pm; and night shift as applicable

		• Provide communication for outdoor staff to contact manager on duty if they are experiencing symptoms from poor AQI • Provide medical center leadership memo communication about air quality (including talking points)
UNHEALTHY 151 to 200	**Respirator:** N95 (employer required to offer)	**Document Required:** Appendix B to all outdoor staff *Note: N95 use in this AQI range is at the discretion of the staff member.* *Note: Appendix B must be completed with facility-specific information before distribution to staff.* **Actions:** • Offer N95 and Appendix B to all outdoor workers *Note: staff may refuse to wear N95 but must be given Appendix B regardless, if not previously distributed* • Follow actions for UNHEALTHY FOR SENSITIVE GROUPS **Other Considerations:** • Move work to enclosed structures, if feasible • Relocate employees to a location with lower AQI, if feasible • Reduce work time in outdoor setting/Reduce length of outdoor shifts, if feasible • Increase rest time and provide a rest area with filtered air (KP Occupational Medicine recommends 15 minutes of rest in rest area every 2 hours) • Reduce physical intensity of work, if feasible • Alternate workers in outside shifts, if feasible • *Notify affected staff, department managers, and medical center leadership of any operational changes related to the AQI*
VERY UNHEALTHY 201 to 300	**Respirator:** N95 (employer required to offer)	**Document Required:** Appendix B to any outdoor staff who receives a respirator **Actions:** • Follow actions for UNHEALTHY FOR SENSITIVE GROUPS **Other Considerations:** • Follow actions for UNHEALTHY • Consider pausing or moving outdoor operations indoors until air quality improves • Notify Regional Command Center of decision
HAZARDOUS 301 to 500	**Respirator:** N95 (employer required to offer; 500 +, respirator required)	**Pause or move all outdoor operations indoors until air quality improves** • Consult with the Regional Command Center for guidance *Note: an exception may be made for emergencies or critical operations, such as critical engineering operations*