Phylmar Group® Environmental Health & Safety Social Responsibility

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California DOSH of Industrial Relations
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RE: Draft Proposed Revisions to Wildfire Smoke Emergency Regulation

Dear Ms. Neidhardt:

The Phylmar Regulatory Roundtable (PRR) appreciates this opportunity to provide comments on the Division of Occupational Safety and Health's (DOSH's) 13 August 2019 draft revisions to the Wildfire Smoke Emergency Regulation. PRR filed previous comments on the emergency regulation with DOSH on 26 April 2019 and 10 May 2019, with the Board on 4 June 2019, and with the Office of Administrative Law (OAL) on 23 July 2019. PRR comments were developed based on the experience, guidance and recommendations of PRR members, many of which are directed to restore power, water, gas and communications systems during and after a wildfire. Of course, the opinions expressed below are those of PRR, and can differ from beliefs and comments of individual PRR members.

PRR is a group of 40 companies and utilities; 15 of the members rank among the Fortune 500. Combined, PRR members employ more than 847,000 individuals in the U.S. PRR members are committed to improving workplace safety and health, and, through informal benchmarking and networking, share best practices to protect employees. In addition, members work together in the rulemaking process to develop recommendations to federal and state occupational safety and health agencies for effective workplace regulatory requirements.

General Comments

Wildfire Smoke Situations Should Be Treated Differently From Typical Workplace Safety and Health Issues In a Regulatory Context – As we have seen, wildfires can be catastrophic; they seem to be occurring with increasing frequency and resulting in significantly more damage than used to be the case. In addition to recognizing the challenges involved for all employers, the permanent regulation MUST take into account that restoring operations in the power, gas, water, and communications sectors is of critical importance in wildfire recovery efforts; such restoration is are NOT normal business operations. We are concerned that the regulation will impair these efforts. For example, water utility workers are often called in by firefighters to boost water pressure to certain stations, and power utility workers are called upon to guard energized power lines to keep the public from contact with them. Depending upon the number and location of employees who are clean shaven, have completed the fit testing and medical

evaluations (and follow up medical examinations, if required), delivery of these much-needed services may be delayed.

Further, it is critically important to remember that wildfire smoke exposure results from an emergency condition, wildfires themselves. As DOSH and the Board know, emergency circumstances require greater flexibility for employers and call for relief from regulatory burdens that can slow or hinder recovery efforts. One example is 8 CCR 5141(c) which provides relief from the usual hierarchy of controls during emergencies, to better allow the use of respiratory protection. We recommend this approach as a guiding principle in developing the permanent regulation, rather than simply make minor changes to the emergency regulations.

We had urged DOSH to take a step back and think "outside the box" with regard to several of the provisions in the draft regulation, particularly with regard to the scope, controls, and training subsections. Wildfires break out without notice and require immediate response by different industries and employers. Traditional engineering controls are simply not practical and will require expenditure of resources needed more urgently in other places. We were pleased to see, and strongly support, DOSH's exception in (f) that engineering and administrative controls are not necessary for utilities and communications work when such operations are directly aiding firefighting or emergency response. We strongly recommend that these utility and communications operations be exempt from mandatory respirator use as well.

A very different discussion would be underway if DOSH and the Board had followed recommendations to suspend enforcement of respiratory protection requirements for the duration of a wildfire emergency, rather than adopting the complicated, and, in some cases, un-implementable, emergency regulation that we are using as a basis for the permanent standard. We are disappointed that we must continue to comment on another version of the complex proposal adopted by the Board in July 2019, rather than a more effective, simplified approach that would be feasible to comply with during **emergency** wildfire events.

I. Specific Comments on Version 1.0; We Urge DOSH to Make A Change when Applying for an Extension to the Emergency Regulation Effective 7/29/19

PRR, utility, and communications representatives repeatedly requested that DOSH, the Board, and/or OAL eliminate the requirement for mandatory respirator use for emergency operations that are directly aiding firefighting or emergency response. Examples of this include: electric power utilities removing or guarding downed energized lines so that firefighters and the public will not be at risk; water utility employees, mandated to respond to disasters, turning up the pressure at a water station as requested by firefighters; assisting residents in evacuation, and communications workers who are restoring systems so that the firefighters can communicate with each other during the emergency. Electric utilities have the additional concern that although there are flame resistant respirators, none that they have found are arc-rated to protect workers as they are de-energizing downed power lines during a wildfire emergency. This leaves the employers in the untenable position of determining which regulatory requirement they will meet: protecting employees from arc flash, or 8 CCR 5141.1.

We understand from DOSH's conference call on 9/26/19 that staff is considering exempting utilities and communications employers from the mandatory respiratory protection requirements of the permanent regulation. Because time is of the essence, we respectfully request that DOSH take whatever steps necessary to revise the regulation to include an exception from mandatory respirator use in the Certificate of Compliance required for the extension of the emergency regulation by 90 days in January 2020. In the alternative, we request a written document stating that in emergency operations where utility and communications workers are directly aiding firefighting or emergency response, the existing mandatory respiratory protection requirement in (f)(4)(B) will not be enforced.

II. Specific Comments on Version 2.0, "Black Bold Underlined Text" for Permanent Regulation

PRR comments and recommendations are listed under the appropriate sections as identified in the 13 August 2019 draft. Any revised and/or additional content PRR recommends is in **bold;** suggested deletions are in ~~strikethrough~~). We offer the following comments and recommendations for your consideration:

Subsection (a) Scope

A. Recommendations for (a)(1):

CONCERN 1: The AQI is Not an Appropriate Basis for an Occupational Health Regulation: Health and safety experts have worked with Permissible Exposure Limits (PELs) for an eight-hour time-weighted average to determine employee exposure to a contaminant. PRR remains concerned about the use of a compliance threshold level developed for environmental, rather than occupational exposure. The Air Quality Index (AQI) is not an eight-hour time-weighted average, but is intended to educate the general public, rather than establish occupational exposure limits.

We believe that exposure limits for PM2.5 should be derived from health hazard exposure assessments, similar to how occupational exposure limits are determined for other regulated chemicals. However, if the AQI for PM2.5 is the selected metric, the level where the regulation becomes applicable should be no lower than 151. AQI PM2.5 levels below 150 are solely intended to convey warnings to sensitive population groups, including people who have heart or lung disease, older adults, children, and teenagers.

Further, the occupational exposure limits for PM2.5 should be established as full shift Time-Weighted Averages, ceiling limits, and/or short-term exposure limits based on health hazard assessments for particulate exposures during wildfire events, where the dose is both a function of concentration and duration. This is part of the work that needs to be done for a permanent regulation.

CONCERN 2: There is a discrepancy between how the local air districts and EPA report AQI PM2.5 values. Local districts use a 24-hour rolling average and values will never be reported above 500. The EPA uses an algorithm (NowCast) and values reported may exceed 500. Correspondence to a PRR member, San Diego Gas and Electric, from USEPA 9/23/19:

AirNow obtains its data from state and local agencies; in this case we do get the data from SD APCD. It looks like SD APCD uses a rolling average, but AirNow uses an algorithm called NowCast. That's why you will see differences between their AQI numbers and ours. There also might be rounding or truncating differences. You can read about the NowCast at this link: https://airnow.zendesk.com/hc/en-us/articles/221305528-How-is-the-NowCast-algorithm-used-to-report-current-air-quality-

If you are looking for hourly AQI values that respond to rapid fluctuations of air quality so you can make decisions, the NowCast will be more responsive than a rolling average, so consider the needs you have for the data.

2. AirNow used to NOT report values of the AQI over 500, but we changed a few years ago when the AQI began to be used in countries where the AQI can be often above 500. Our on-line calculator does not calculate for values above 500, which are still pretty rare in the U.S. To calculate the AQI above 500, AirNow follows the instructions in the document I mentioned last time:

Pages 14 and 15 have a few Q and As about calculating "Beyond the Index." I'd start there, then you'll know what to do with the general equation on page 9.
https://www3.epa.gov/airnow/aqi-technical-assistance-document-sept2018.pdf"

Correspondence from William C. Brick, CCM, Chief-Departmental Operations, Monitoring and Technical Services Division, San Diego Air Pollution Control District (APCD) to the same PRR member reads as follows:

1. Q: Will AQI PM2.5 values which exceed 500 be listed as the actual number?
   A: No, the calculation can't go any higher.

2. Q: How many hours are the AQI PM2.5 values averaged over?
   A: 24-hour running average. Need a minimum of 18-hours (75%) for valid average.

3. Q: Is the forecast only available for the following day?
   A: On weekends/holidays we have forecasts out to three days.

4. Q: Is the forecast based on an average? If so, how many hours?
   A: 24-hour running average.

PRR is concerned that employers will rely and make decisions based on an Air Pollution Control District number for AQI for PM2.5 which will be different from that shown on EPA's website. Were they to be inspected, and Cal/OSHA sees a higher number from AirNow, (i.e., over the trigger of 151 or 500) and the employer is not taking appropriate action, the employer will be cited even though they checked a website in good faith. We also believe it will be confusing for employers to have two different numbers for the same location.

B. Recommendation for (a)(1)(B)

CONCERN: Based on the Governor's progress report and state of emergency with regard to wildfires, it seems that there is no scenario in which an employer would not "reasonably anticipate that employees may be exposed to wildfire smoke." Industry representatives have requested that an employer be able to rely on a state or local government entity's announcement that a wildfire emergency is underway in order for them to be covered by the regulation. Is the regulation triggered if the PM2.5 levels are due to a structural fire, not a wildfire that anyone is aware of? We thank the Division for finding the Incident Information System which has information from many sources, including National Oceanic and Atmospheric Administration (NOAA), the U.S. Geological Survey (USGS) and USEPA. This website is easy to use and more up-to-date than the Cal/Fire website.

We thank the Division for finding the Incident Information System which has information from many sources, including National Oceanic and Atmospheric Administration (NOAA), the U.S. Geological Survey (USGS) and USEPA. This website is easy to use and more up-to-date than the Cal/Fire website. This objective trigger would be useful for employers to determine whether the PM2.5 levels are due to wildfire smoke. However, it is a concern that DOSH is expecting tens of thousands and perhaps millions of employers to monitor and find this information on a regular basis, versus having ONE centralized source "push" the notification to employers who then must respond. Currently, the Department of Industrial Relations sends out heat illness advisories. Something similar for wildfires would be very helpful and would encourage employer compliance.

Another question is, because the 2018 Camp Fire was not contained for 18 days, should employers "reasonably anticipate" that situation will arise again, and stock respirators for each employee for 18 days? PRR has no answers for many of the questions members have raised.

In addition, employers need to know when the regulation is no longer triggered. Is it just when the AQI PM2.5 is less than 151, or 300? We recommend that DOSH include some statement about when the emergency calling for the wildfire smoke protections is over.

Recommended language:

(B) **A federal, state or local entity has issued an advisory or announcement of a wildfire emergency.** ~~The employer should reasonably anticipate that employees may be exposed to wildfire smoke.~~

Rationale: As we have seen in recent years, wildfire smoke "goes where it goes" during and following an emergency. Due to wind direction and speed, as well as inversion layers, some areas relatively close to a wildfire may not experience significant smoke, while others, further away, will. There are many situations in which employers will not know, based on the AQI for PM2.5, whether exposure to wildfire smoke is "reasonably anticipated." Having an official agency identify those areas that are impacted by wildfire smoke will remove the uncertainty for employers as to whether the regulation is triggered.

C. Recommendation for (a)(2)(B):

CONCERN: The Current Language Puts a Burden on Employers that is Not Feasible to Comply With: It is unreasonable in an emergency situation to require that the employer "ensure that windows, doors, or other openings" of enclosed vehicles are "kept closed to minimize contamination by outdoor or unfiltered air." Where employees are in mobile crews, the employer is not present to ensure that these potential openings are kept closed. The employer should include the importance of keeping all vehicle openings closed in the information provided to employees, but "*ensuring*" that they are kept closed, when the employer may have no way of doing so, is unreasonable. This is not a situation where employees are parked at a single worksite and are easily supervised.

In addition, based on a cursory review of industrial vehicles in use by PRR member companies, we believe that approximately 10-20% of industrial vehicles currently have cabin air filters, contrary to DOSH's assertion to the Board that "all vehicles have cabin air filters." While true for late model passenger vehicles, this is not the case for industrial vehicles.

Sales and service vehicles are typically more recent models, and a higher percentage of them may have cabin air filters. We also caution that many of the cabin air filters that are present in vehicles do not operate when the "recirculated air" option is in use.

Recommended Language for (a)(2)(B):

Enclosed **air-conditioned** vehicles **when the employer informs employees of the ability to use the recirculation feature to reduce air intake from the exterior of the vehicle.** ~~where the air is filtered by a cabin air filter and the employer ensures that windows, door, or other openings are kept closed to minimize contamination by outdoor or unfiltered air.~~

Rationale: This language limits the scope of the exemption to air-conditioned vehicles and removes the requirement that employers ensure that openings are kept closed which is not feasible when mobile crews are restoring gas, power, water and communications systems during wildfire emergencies. PRR members have determined that a small percentage of their industrial vehicle fleets come equipped with cabin air filters, and it is not possible to simply retrofit certain vehicles at all because an air filter cannot fit in the dashboard.

D. Recommendations for subsection (c)Identification of Harmful Exposures:
CONCERN – Mobile Crews: The first sentence is a requirement that an employer check the AQI forecasts and the current AQI on various websites at the start of each shift and periodically thereafter. Some PRR members have numerous mobile crews that are in various locations during the course of a day. It would be impractical, and sometimes infeasible, to track all the AQI forecasts during the work hours which may bear no relationship to the actual AQI at a given time and employee location. Moreover, it would be virtually impossible for employers with mobile workforces to track local conditions for each employee in a sufficiently specific and timely manner.

Moreover, PRR members are concerned that the AirNow website is not always a reliable source to obtain an AQI. We understand that the website crashed during wildfires in 2017 and 2018 due to over-capacity. We recommend that DOSH carefully review this issue and if that problem persists, referral to the AirNow website should not be required. Nor should employer have to track multiple websites. If there is not a single reliable source, this would be yet another reason not to use the AQI standard.

Recommended Language:

EXCEPTION**S**: **(1)** Subsection (c) does not apply where an employer assumes the current AQI for PM2.5 is greater than 500 and uses that assumption to comply with subsection (f)(4)(B).

(2) For mobile employees and crews, to assure the most up to date localized information, an employee working alone or a designate crew member may be required to periodically check the AQI for PM2.5 and communicate to the employer any air quality concerns or local conditions that adversely impact air quality.

Rationale: An exception for mobile employee is appropriate for the reasons stated above. This issue was also recognized with the Outdoor Heat Illness Prevention Standard, and an attempt was made to address this issue by requiring two-way communication between the employer and the mobile or solo employee who would be in the best position to monitor local conditions. See 8 CCR 3395(b). Employers should be able to rely on employees who are out in the field to communicate when conditions worsen and other action is needed. Again, we are talking about **emergency situations.**

E. Recommendation for subsection(d) Communication:

CONCERN about (d)(1): PRR members, and most employers in the State, do not employ trained meteorologists. Requiring employers and employees to always be able to identify changing wind patterns, temperature inversions, or other factors leading to a worsening of air quality simply cannot be done amidst the response to the wildfire emergency.

Recommended Language:

(1) ~~Informing~~ **Communicating with** employees **about** ~~of~~: ...

Rationale: See recommendations above for subsection (c). PRR recommends that DOSH consider delegating some duties to the mobile employees who would be in the best position to monitor local conditions. This language encourages two-way communication so that both employer and employees stay informed of air quality changes and decisions can be made as to what they can reasonably do in an emergency.

F. Recommendations for subsection (e) Training and Instruction:

CONCERN 1: PRR members are often involved in restoring gas, power, water, and communications systems to communities and areas that have been affected by wildfires, among other activities in areas impacted by wildfire smoke. The PRR members involved in these efforts conduct pre-job briefings, tailgate meetings, or other on-the-job instruction in the safety and health hazards of the work environment and the measures employees must take to protect their health. Wildfires are unannounced events in most cases, requiring immediate

response. Stopping to conduct training, which for PRR members involves development of curricula, attendance rosters, and following tracking processes, will delay the much-needed immediate response. PRR members have found that classroom training is often less effective than on-the-job instruction.

Recommended Language:
(e) ~~Training and~~ Instruction. The employer shall provide employees with ~~effective training and~~ **Instruction** on the information contained in Appendix B

Rationale: Wildfire events, although more frequent in recent years, are not commonplace working situations. PRR recommends that DOSH recognize this truth and diverge from its typical rulemaking approach. The words "effective training" have been used since 1991 in the Injury and Illness Prevention Program and have a particular interpretation as planned, formal programs (e.g., a compliance officer asks for "training records" and signed attendance rosters). What is most important in emergency restoration efforts is that employees understand how to protect themselves from the hazard of wildfire smoke. We urge the Board to keep its eye on the goal here, which is to protect workers during wildfire events, not during normal business operations.

G. Recommendation for (f)(1) – Control of Harmful Exposures to Employees

CONCERN: Because of the critical role played by those in the power, gas, water, and communications industries during and after wildfire emergencies, we believe that the provision in (f)(1) must include an exemption from the requirement for mandatory respiratory protection in these limited situations. We strongly support the language in subsection (f)(1) which exempts utilities and communications operations when they are directly aiding firefighting or emergency response.

Recommended Language:

> In emergencies, including rescue and evacuation, subsections (f)(2)**,** ~~and~~ (f)(3)**, and (f)(4)(B)** do not apply, and employers shall comply with subsection (f)(4)**(A)**. Emergencies include utilities, communications, and medical operations, when such operations are directly aiding firefighting or emergency response. **This will assure that, for example, water utilities boosting station pressure for firefighters and power utilities protecting the public from downed energized power lines are able to quickly and effectively perform these needed tasks.**

Rationale: We applaud DOSH's recognition that utilities and communications employers should be exempt from the requirements for engineering and administrative controls during emergency response efforts. We strongly recommend that DOSH also eliminate the requirement for mandatory respiratory protection for these operations thus narrowly defined.

Wildfire smoke emergency conditions do not provide the time or material for constructing such enclosures. By the time the structures are completed, the smoke hazard has likely passed. Expenditure of resources in this manner is wasteful, particularly in light of other

urgent needs at this time to restore gas, power, water and communications systems, shelter, etc. Further, it has long been recognized by The Board that respiratory protective equipment "shall be used to prevent harmful exposures …in emergencies" 8 CCR 5141(c)(3).

H. Recommendation for (f)(4)(B):

CONCERN: Because of the unique circumstances involved in wildfires, we recommend that the Board not require mandatory use of respirators at all for emergency utility and communications operations.

Recommended Language: Deletion of (f)(4)(B) unless exception requested above is accepted.

Rationale: The Respiratory Protection Standard (8 CCR 5144) and its federal OSHA equivalent were written for situations where there is a regular exposure to an atmospheric hazard or hazards. These hazards are to be addressed through the hierarchy of controls. Wildfire smoke above any designated trigger value is not a regular exposure and 5144 should not be applied to any emergency wildfire situations. Because the assigned protection factor for N-95s is 10, employees would use the same type of respiratory protection for an AQI of 501 as they would for an AQI of 150. The requirement for mandatory respirators obligates employers to provide fit testing and medical evaluations, which require time not available when responding to an emergency. As we have stated before, we are not aware of any respirator that has been approved as Fire Resistant for use by electrical workers performing energized work necessary to take out downed power lines and restore power.

I. Recommendation for (f)(4)(B

CONCERN: In the last line of the current regulation, it requires "that the PM2.5 levels inside the respirator correspond to an AQI less than 151." Once the PM2.5 concentration exceeds 550, a half-face APR or filtering facepiece (N95) is not sufficient to reach the required 151 inside the respirator. We are not aware of the scientific justification for this requirement, and the practicality of switching to full-face or PAPRs when the AQI reaches 151 for PM2.5 **during an emergency situation in which crews are** trying to restore power, gas, water and communications systems and aiding firefighters, will likely delay response efforts.

Recommended Language:

> (B) Where the current AQI for PM2.5 exceeds 500… The employer shall provide respirators with an assigned protection factor, as listed in section 5144**, which reduces the exposure to below an AQI for PM2.5 of 500.** ~~such that the PM2.5 levels inside the respirator correspond to an AQI less than 151.~~

Rationale: Voluntary respirator use is specified for an AQI for PM2.5 between 151-500. Any required respirator should only have to lower the exposure to an AQI for PM2.5 to below 500, in order to be consistent with other sections of this regulation.

Also, assigned protection factors should be determined in accordance with 8 CCR 5144. It is difficult to explain logically during training that if the AQI for PM2.5 is 499, an employee can voluntarily wear an N95, but once the PM2.5 concentration exceeds 550, an employee must wear a full-face APR or PAPR. If it is difficult to explain and understand, it will be a challenge to reach compliance. Again, the requirement to change to a PAPR during a wildfire emergency will likely delay response efforts.

J. Subsection (f)(4)(B) Arc Flash EXCEPTION

CONCERN: We appreciate the Division crafting an exception to the requirement for mandatory respirator use over an AQI of 501 for PM2.5, but the language requires the employer to demonstrate in each case: (a) that employees are exposed to arc flash hazards; and (b) that arc-rated face shields, or hoods worn over a respirator would create a greater hazard to the employee than exposure of PM2.5 without a respirator. With respect, DOSH is not recognizing that these energized power line operations affected by a wildfire **are occurring during a wildfire emergency, not during normal operations where such a demonstration is appropriate.** Employers will not be able to make such a demonstration in each case without significantly affecting the timeliness of response efforts.

One PRR member, San Diego Gas and Electric, recently conducted testing on a major manufacturer's flame-resistant (FR) and non-flame resistant (NonFR) N95 filtering facepieces to see whether they ignite, melt, or drip. Multiple masks of two FR models did not melt, ignite or drip to at least 9.7 cal/cm2, but the uncovered straps for most masks melted. For both NonFR models that were tested, masks and/or straps ignited, melted and/or dripped at various arc energies. However, the utilities depend on the manufacturer of PPE to certify that their product is arc rated. The respirators tested are not arc rated by the manufacturer. A utility would take on considerable liability should the PPE fail in an arc flash situation after deciding to use it based on the utility's own testing. The utilities are not PPE manufacturers and manage these risks by selecting PPE as qualified by the manufacturer. The utilities know of no manufacturers who have arc rated respirators.

We sincerely hope that DOSH will revise the requirement in (f) to exclude utility and communications operations that are directly aiding firefighting or emergency response, as was suggested during the 26 September 2019 DOSH conference call. **We strongly recommend that DOSH take actions necessary to amend the emergency regulation when it is up for extension in January 2020 to exempt these operations.**

Should DOSH decide not to do so, response efforts will be delayed. In addition, we ask that DOSH move the (f)(4)(B) exception to the permanent rulemaking, rather than waiting until the revised permanent rulemaking is undertaken. We believe this is sound public policy that will protect workers as well not impede recovery efforts.

Should DOSH decide not to change the permanent regulation either, we encourage, at a minimum, that DOSH in the revised permanent regulation, eliminate the exception specific to arc flash and instead use the exception from mandatory respirator use as requested above.

Rationale for Recommendation: We appreciate that DOSH has indicated a willingness to rectify its lack of recognition in the emergency regulation that electrical power employers are being asked to protect employees against either arc flashes or wildfire smoke. However, the language proposed does not solve the problem. We strongly encourage DOSH to include an exception to the mandatory respirator use requirement for arc flash environments in the permanent regulations, to be finalized by July 29, 2020. However, this issue also needs to be addressed in the emergency regulation which is up for extension in January 2020. Leaving the language as is makes delays in having utility workers assist in critical operations.

K. Appendix B Recommendation for subsection (b)

CONCERN/COMMENT: It appears that a requirement has been included in the text of Appendix B, (b), which states that "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." Employers are already required to do this under 8 CCR 3400. We recommend that this language be included in the text of the regulation itself or not at all because it currently exists in Title 8, section 3400.

L. Appendix B, subsection (7)(2)

CONCERN: There is inconsistency between the regulatory text (a)(3) and (f)(4) Note, and Appendix B(2), page 9, which requires employers to instruct employees that they should:

> (2) Read and understand 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 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.

However, manufacturers' instructions that we have seen state that a Respiratory Protection Program, including medical evaluation and fit testing must be in effect for the use of the respirator. This will create confusion for both employers and employees because voluntary use of a respirator does not require either medical evaluation or fit testing.

M. Appendix B Recommendation for (7)(2) and (8)

CONCERN: It will be confusing for employees and small employers to see language about "maintenance, cleaning and care" of an N-95 which actually should be disposed of after no more than one day. No maintenance, cleaning or care is required for these respirators, nor should employees be expected to do so under emergency conditions. This is an example of confusing language in the Appendix.

Recommended Language:

2. Read ~~and follow all instructions provided by the manufacturer on use, maintenance, cleaning and care, and~~ warnings regarding the respirator**'s** limitations.

(8) How to properly put on~~, use and maintain~~ the respirators provided by the employer.

Rationale: N-95 filtering facepiece respirators are not designed to be worn for more than one day, and should not be. Therefore, no maintenance, cleaning or care instructions need to be read or followed. As stated above in (I), the "use" part of manufacturers' instructions discuss medical evaluations and fit testing, which is not required to be done for voluntary use. Further, it is not reasonable for anyone to expect that in a wildfire emergency, employees are going to read and follow all instructions provided by the manufacturer.

All references to maintenance, cleaning or care of the respirator should be deleted to eliminate confusion.

III. Specific Comments on Version 3.0, "Red Bold Underlined Text with Yellow Highlight"

A. Scope Subsections (a)(1), (a)(2)(C), (a)(2)(D), and (a)(4).

CONCERN: Workplace safety and health regulations are set to address a healthy working population. They have not been set for the general public health, including sensitive populations, i.e., ageing, heart or lung disease, teenagers, and young children. The working population is categorized as "general public" and is typically healthier. The website AirNow states:

> "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."

We believe that DOSH has not provided any scientific basis for requiring reduction of the voluntary respirator requirement from AQI for PM2.5 of 151 to 100, or for requiring mandatory use of respirators at 300 rather than 500. Although we heard anecdotal testimony at the Board hearings and during the Advisory Committee meetings, no scientific findings have been provided. We therefore recommend removing references in (a)(2)(C), (a)(2)(D), and (a)(4) to an AQI for PM2.5 of 100.

Exposure limits for PM2.5 should be derived from health hazard exposure assessments, similar to how occupational exposure limits are determine for other regulated chemicals. However, if the AQI for PM2.5 is the selected metric, the level at which the regulation is triggered should be no lower than 151. The occupational exposure limits for PM2.5 should be established as full shift Time-Weighted Averages, ceiling limits, and/or short-term exposure limits based on health hazard assessments for particulate exposures during wildfire events, where the dose is both a function of concentration and duration.

RECOMMENDED LANGUAGE:

The current Air Quality Index (current AQI), for PM2.5 is ~~100~~ **151** or greater, regardless of the AQI for other pollutants; and

RATIONALE: For consistency with other workplace safety and health regulations, the threshold that triggers implementation of a program should address the general population, not the most sensitive groups.

B. Subsection (a) Scope – Minimum Efficiency Reporting Value (MERV)

CONCERN: We understand that the revision to the permanent regulation is some time away, but PRR members wanted to respond to the wording in the 13 August draft which states "Discuss what minimum MERV filtration should be required for buildings and vehicles." It is very difficult for the regulated community to comment when we do not know what DOSH is contemplating. We were not able to locate any information at all on MERV filtration for vehicles, but offer the following on MERV ratings for industrial buildings.

There are basic fundamentals of air flow and HVAC system design that need to be kept in mind when discussing building filtration. The biggest concern is that commercial HVAC systems are designed with a particular fan size, fan motor size, filter efficiency, static pressure, velocity pressure and duct strength and size. It is not possible to place high efficiency filters on systems that are not designed for them. Most commercial HVAC systems are designed to run a particular filter. In a standard set-up, commercial HVAC systems typically use around MERV 8 rated filter. It is not possible to install a MERV 13 or higher filter on such a system. The ducts and motor are not designed for the excess pressure it takes to move air through the tighter filter. So while at a glance it may seem like a good idea to just add more efficient filters, HVAC systems do not function that way.

One PRR member's facilities typically run MERV 7-9 rated filters. Their engineers said that the coils would freeze up and the system would cease to be operational if they added filters higher than MERV 9 rated filters. Unless DOSH contemplates a complete restructuring of all industrial HVAC systems, we caution the Agency not to require a higher MERV rated filter than equipment can handle. One possibility would be to require the "highest level of MERV rated filters that the existing equipment can smoothly operate."

RATIONALE: As stated above, HVAC systems are designed to function a certain way. One author identified unintended consequences of higher MERV ratings (article is here) which include: bigger pressure drop, use of more energy, reduced air flow, reduced comfort, damage to the compressor, and potentially cracking the heat exchanger, resulting in turning a duct system into a carbon monoxide distribution system.

DOSH should require that employers provide MERV rated filters consistent with their equipment, rather than set an arbitrary high MERV rate for filtration. Due to the number of unresolved issues at this, it is challenging to propose a specific position regarding MERV filtration at this time, but we will provide more details at a later time. In the meantime, PRR supports the following:

- Protecting employees (and members of the public) in member company buildings and vehicles from wildfire smoke by using feasible, cost-effective engineering controls to prevent adverse health effects.

- Using particulate filtration to reduce PM2.5 levels in occupied buildings and vehicles.

- Following some of the recommendations of the EPA publication **Wildfire Smoke: A Guide for Public Health Officials.**

C. Subsection (a)(3)

CONCERN: Setting a third level of requirements for employers unnecessarily complicates the regulation and the likelihood that compliance will be achieved. It is inappropriate to use an AQI threshold of 100 at all, and no additional requirements should be triggered at that level.

RECOMMENDED LANGUAGE: Delete (a)(3) in its entirety.

RATIONALE: Three levels of compliance unnecessarily complicate this regulation, which will apply to virtually every employer in the State. The easier it is for employers to understand requirements, the greater compliance will be achieved, and the greater worker protection will be realized.

F. Subsection (c) (no title)

CONCERN: Again, these additional obligations for work area where the AQI for PM2.5 is greater than 100 and less than 151 unnecessarily complicate the regulation. This regulation is for emergency situations resulting from wildfire events.

RECOMMENDED LANGUAGE: Delete subsection (c) in its entirety.

RATIONALE: Wildfire events are not normal operations. We encourage DOSH not to have three levels triggering varying levels of requirements that will likely result in confusion. This adds unnecessary steps during hazardous situations in the midst of a wildfire emergency and does not help employers either comply with the regulation or protect their employees.

H. Subsection (f)(4(A)

CONCERN: The trigger level of AQI for PM2.5 of 300 for mandatory respirator use will result in widespread business disruption. In Sacramento alone, there were several days in November 2018 where the AQI for PM2.5 exceeded 300 during the Camp Fire. It is likely that many employers will simply send employees home, resulting in loss of revenue and in many cases, workers being sent home with no compensation.

RECOMMENDED LANGUAGE:

(A) Where the current AQI for PM2.5 exceeds **150 but does not exceed 500 ~~300~~,** the employer shall provide a sufficient number of respirators to all employees for voluntary use in accordance with section 5144 and encourage employees to use respirators…

Rationale: Shortages of N95s and other respiratory protective equipment have been experienced during recent wildfire events. It is important that these shortages not be exacerbated by a regulation requiring respirators for non-emergency circumstances. While we understand that suppliers say they can provide the respirators, we have not experienced that they can assure delivery when there are competing demands for the product. Again, DOSH has provided no scientific basis for the significant lowering of the threshold for mandatory respirator use.

Further, it is surprising that DOSH believes that at an AQI of 499 (or 299), voluntary use of a respirator is appropriate, and one index point different, mandatory respirator use is required. It also defies logic to permit an employee to wear a respirator on a voluntary basis at any level, but fit testing and medical evaluations are required at these specific levels. Again, this is an **emergency situation.** This is not a normal business operation.

I. Subsection (f)(4)(B) EXCEPTION

CONCERN: This language will require a demonstration by electric power employers that arc flash hazards create a greater hazard to the employee than exposure to PM2.5 without a respirator. Again, the regulation applies in **emergency wildfire situations, not normal operations** where a meaningful assessment of hazards and control measures is possible. Although the concept is appreciated, the language itself is problematic because in the midst of an emergency situation, the "demonstration" required by the exception creates more challenges.

We understand that DOSH is considering an exemption from the mandatory respirator requirements for utility and communications operations which directly aid firefighting or emergency response. As stated before, we strongly urge DOSH to do so immediately. This will eliminate the need to develop revised language for the exception.

RATIONALE: We appreciate that DOSH is attempting to rectify its lack of recognition in the emergency regulation that electrical power employers are being asked to protect employees against either arc flashes or wildfire smoke. We strongly encourage DOSH to include an exception to the mandatory respirator use requirement for arc flash environments in the permanent regulations to be finalized by 29 July 2020, rather than wait for yet another rulemaking. In addition, as previously stated, we request that DOSH work to get this exception into the emergency regulation beginning January 2020.

IV. Cost Estimates: PRR members have provided the following information in scenarios that may be of use to DOSH during this process:

Scenario 1 – Electric Power Utility

PAPRs Purchase	$840,000
N95 Purchase	$172,000
CBT Dev	$ 15,000
CBT Seat Time	$ 136,500
PAPR Training - Seat Time	$ 60,000
PAPR Medical	18,690
Total:	$1,242,190

Scenario 2 - Water Utility; total First year Costs: $285,500

550 Employees are involved in outdoor work.
Medical Costs (Basic + spirometry) $200 x 550 employees= $110,000
Training (0.5 hour EHS Specialist + 0.5 hour O&M Mechanic)= $55/hour x 550 employees= $30,250
1 hour to complete medical evaluation at clinic= $55 x 550= $30,250
Half face respirator + HEPA cartridges= $50 x 550 employees= $27,500
Porta-Count machine (Quantitative Fit Test)= $9500 x 5 Treatment Plants= $47,500
Administrative Costs= $40,000

Scenario 3 Electric and Gas Utility

There are high costs associated with retrofitting industrial vehicles with cabin air filters. Currently, 82% of our vehicles driven by our critical responders do not have cabin air filters. Retrofitting in some cases (Fords) is not possible at all, due to dash space. Cost to upgrade all of our Chevys is $60k ($150/vehicle).

Most of our buildings would require filter and/or fan modifications to comply with higher MERV ratings (above 7 or 8).

We estimate the cost to implement this program is $550k for tangible items, including medical evaluations, fit testing, and respirators. This estimate does not include labor costs to deliver training or annual incurred costs.

PAPRs with built in head protection are Class G rated hard hats. For our operations, we require Class E hard hats (tested up to 20,000 volts).

Scenario 4-Water Utility

800 Field Employees			
		COST	
Respiratory Medical Questionaire	$46 Each	$ 36,800.00	
Assume 20%(160 need a physical Exam)	$146 each	$ 23,360.00	
Resp Training per 5144 (1.5 hrs training, $50/hr)	$50/hr labor cost	$ 60,000.00	
Fit-Testing (Assume 1 hr total time each)	$50/hr labor cost	$ 40,000.00	
Full Face Respirator for each emploee	$360 each	$ 288,000.00	
	INITIAL COST	$ 448,160.00	
	ANNUAL RECURRING	$ 160,160.00	Assume medical clearance, fit-testing, annual training

Assumptions:

- 800 field personnel who would be called on to work outdoors
- $50/hr average labor rate
- 20% would not be medically cleared via questionnaire and would need to be seen
- Medical costs were taken directly from out contracted medical provider
- Everybody is issued a full face respirator – Actual cost of respirator from purchasing,
- $488,000 first year; $160,000 annually thereafter.

Scenario 5 - General Industry, High Tech

- 40,000 employees in California

- Respirator Cost: $27/20pk=$1.35*40,000 employees =$54k
- Paradise California (Camp Fire) = 18 days before containment

- ($1.35*10,000 employees)*10 days =$135K (Respirators only)
- ($1.35*20,000 Employees)*10 days = $270k

- Training: 30 min for all employees in CA: $30*40,000 = $1.2M

Scenario 6 – Telecommunications

- Over 10,000 technicians in California that could work around wildfires.

- We have established a reserve by purchasing 15,000 N95s for use in wildfire situations due to the difficulty in obtaining them when an emergency arises.

- The 30 minute training that we have prepared for all technicians will cost $600,000 (10,000 employees x .5 hour at $120 loaded labor rate per hour.)

- If we have a mandatory respiratory protection program for all 10,000 employees: Fit testing and medical evaluations will cost $ per each employee. 10,000 x $100 (cost of exam) would be about $1 million, plus cost of medical examinations when issues came up on the medical evaluation.

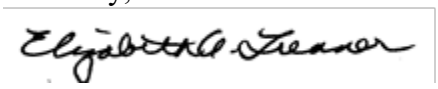
- Cost of time for completion of fit testing and medical evaluations = (One hour per technician at $120 loaded labor rate x 10,000 technicians) = $ 1.2 million

V. Conclusion

In conclusion, PRR supports the intent of the regulation, which is to reduce adverse health effects experienced by worker exposure to PM2.5 during wildfire events. However, we believe that revisions need to be made to make the regulation more workable and to assure that necessary critical emergency response operations are not delayed. The easier the regulation is to understand, the greater the likelihood that the large number of small employers in the state will be able to comply.

We look forward to continued participation in this important process. Please let me know if you have any questions.

Sincerely,



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