



August 17, 2022

Cynthia Ireland
7273 Linderson Way Southwest
Tumwater, WA, 98501

Cynthia,

The Washington State Department of Transportation, WSDOT, would like to make the following comments on the Department of Labor and Industries, Division of Occupational Safety and Health (DOSH) regarding the Wildfire Smoke Rulemaking (WAC 296-62-085). It is WSDOT's goal to prevent illnesses and we are in support of efforts to eliminate and reduce hazards to employees.

We will first answer the three questions for which were solicited, by DOSH during the Stakeholder meeting Wednesday, August 10th, 2022. As part of this promulgation process, WSDOT has additional comments we hope you will consider in an effort to achieve the most effective rule.

Q. What is important to take into consideration when selecting the thresholds for partial respirator program and required use respiratory protection program?

Partial Respiratory Program: Studies DOSH is relying upon are public health studies, not occupational. No clear evidence of a scientific basis to conclude an occupational hazard exists, nor that proposed controls are necessary or effective. Filtering facepiece respirators do not filter any of the large variety of gasses emitted with fires that may also cause or contribute to broad based health outcomes within the studies. It is possible that wearing respiratory protection may increase adverse health outcomes by exacerbating recognized hazards from heat. The technical and economic feasibility does not appear to have been sufficiently considered. DOSH appears to imply that because a limited number of days exceed regulated limits in the past, that costs and impacts may be low. Please consider that virtually all employers with employees who may work one or more hours outdoors will likely need to reach compliance ahead of time, as achieving all required elements may not be feasible on short notice of unpredictable smoke concentrations. The limited number of licensed healthcare practitioners may become overwhelmed and unable to process all requests for medical clearances on short notice. Respirators and filters may reach low or no supply with regional buyouts. Short supply may greatly increase costs of such services and supplies. Because implementing these requirements cannot likely occur with short term notice, virtually all employers with workers who may spend an hour or more outside will need to close during such events or enroll all employees well ahead of fire season. Filtering facepiece respirators have a limited shelf life (e.g. [five](#)

[years](#)) and will require maintaining and rotating stock, often going unused and creating substantial waste. ,, as well Both California and Oregon’s rules do not have a requirement for a partial respiratory program at lower levels.

Does DOSH believe California and Oregon are endangering their workers without such a provision? If so, please provide the scientific evidence. partial respiratory program will benefit employees to a degree, that would make this a plausible addition. Neither California nor Oregon have developed these types of partial respiratory programs. Both implement mandatory respiratory protection at an AQI of 500, and are voluntary use of respiratory protection and levels at AQI 251 (OR) and AQI 151 (CA). Their regulations do not provide for medical evaluations or fit testing.

Permanent Respiratory Program: When looking at the California regulations, *“Where the current AQI for PM2.5 exceeds 500, respirator use is required. Respirators shall be used in accordance with section 5144. The employer shall provide respirators with an assigned protection factor, as listed in section 5144, such that the PM2.5 levels inside the respirator correspond to an AQI less than 151.”* Establishing this as a process would be more feasible for the employers in Washington. This requirement would indicate that the employees would be required to wear a NIOSH approved N95 respirator, (or better), that has been fit tested within the requirements of WAC 296-842. , when the AQI for PM2.5 is greater than or equal to AQI 500.

1. The Environmental Protection Agency (EPA), states “(m)ost healthy adults and children will recover quickly from smoke exposure and will not experience long-term health consequences” (Wildfire Smoke, A Guide for Public Health Officials, 2019, and which DOSH includes as one of their cited resources). Please consider that the reasonable accommodation process may likely be the most effective and cost-efficient method of protection. If outdoors workers are at risk, a specific protection protocol considering a complex set of considerations will likely provide employees superior protection. In contrast, a broad and extensive “one size fits all” approach for all employees who may spend an hour or more outside, not just be substantially more expensive, but provide inferior protection compared to a tailored regimen from a doctor.

Q. What concerns do you have regarding worker protection?

- A. Our concern is that we have not seen the scientific data to support these recommended changes to the emergency rule. WSDOT is always “concerned” with worker protection but establishing a rule just to establish a rule is not in the best interest of our employees or other workers in the State of Washington.

Q. What concerns do you have regarding feasibility?

- A. The fact that this is truly not feasible. Asking employers to maintain stocks of respiratory protection just in case there is a wildfire in the area would not be economically feasible. Asking employers to provide separate medical evaluations for a “Partial” medical evaluation is also not economically feasible or reasonable.

Supplemental statements, questions and comments:

DOSH has not provided a draft version of the permanent rule for the stakeholders of Washington to provide feedback. Please provide additional opportunity for stakeholder feedback as the proposed rule is drafted. Without previewing the proposed rule, it is impossible for stakeholders to provide adequate feedback. During the August 10, 2022, stakeholder meeting, DOSH stated they were “exploring” publishing stakeholder written comments. DOSH has posted stakeholder feedback for rules such as lead. The Federal Occupational Safety and Health Administration includes stakeholder feedback which is presented in the Federal Register. The outcome of the rule making process will be superior if DOSH shares stakeholder feedback with interested parties.

Is DOSH using the “best available evidence” as required under with RCW 49.17.050?

Two of the eight references DOSH states “were considered during the development of draft rule” were from the US EPA. The US National Academy of Sciences recently critiqued the EPA’s Office of Pollution Prevention and Toxics (OPPT) in four categories of whether their risk assessment system was “comprehensive, workable, objective, and transparent” and concluded the EPA’s approach could be “broadly improved to better meet these characteristics for the major review step”.

- “... approach was not comprehensive at each step.”
- “Considering whether the OPPT approach is workable, the report notes several concerns at each step.”
- “The committee found the OPPT approach to be lacking objectivity at each step...””
- “The committee found that transparency of the entire risk evaluation process is compromised across all of its elements.”

OPPT is held to regulatory standards, the EPA special group compiling wildfire smoke publications are not, and therefore may be more prone to such concerns in the process of appropriate risk assessment.

What might the National Academy of Sciences conclude of DOSH’s process?

Confounding factors do not appear to have been evaluated in most studies (confounding being the distortion of the association between an exposure and health outcome by an extraneous, third variable.). For example, some studies have found heat to be a “co-contributor” to health effects, with increasing health effects with higher temperatures and decreasing effects with lower temperatures. These health effects may not be related with increase in body core temperature. In the January 2022 stakeholder meeting, a question was asked about how well confounding factors have been controlled in studies. Dr. Austin deferred to Dr. Kasner. Dr. Kasner indicated “the one” (study) he reviewed controlled for several though not all possible confounding factors.

Some studies have not found associations between some health effects and wildfire smoke. DOSH does not seem to be willing to consider the mixed evidence. Due to small population sizes, some studies have used new statistical methods to base a positive finding between smoke and health effects. Have such new statistics been properly vetted by the scientific community?

DOSH seems to be presenting hazards as certain fact. However, the studies indicate many limitations, challenges, and uncertainties. For example, one of the studies on posted your site (published recently – 2020, Doubleday et al) states: “The health effects associated with wildfire smoke exposure are just beginning to be understood”

The study goes on to review “(e)xposure assessment is challenging, as there is no standard approach for defining what constitutes a wildfire smoke-affected day or period in the health effects literature. Common methods utilize area monitoring particulate matter (PM) measurements, satellite data, chemical transport models, or a combination of these approaches. Differences in effect estimates across studies in part may be due to differences in their exposure assessment approaches, limiting useful comparison within the growing published literature of wildfire smoke epidemiology. More research to define wildfire smoke-affected time periods is needed to validate methods currently in use”.

Doubleday et al report an odds ratio of 1.013 for wildfire smoke. The US Centers for Disease Control and Prevention (CDC) states “(t)he magnitude of the odds ratio is called the ‘strength of the association.’ The further away an odds ratio is from 1.0, the more likely it is that the relationship between the exposure and the disease is causal. For example, an odds ratio of 1.2 is above 1.0, but is not a strong association. An odds ratio of 10 suggests a stronger association.” Other wildfire smoke studies also have relatively low odds ratios. In comparison, cigarette smoking and asbestos have odds ratios well over 10.

We reiterate that the studies are public health studies, not occupational studies. The studies are generally looking at outcomes for wildfire smoke exposure for 24-hour periods or longer, and DOSH is proposing to regulate exposures beginning at 1 hour. Confounding factors (other causes or contributors) have not been well-considered. Reported odds ratios are low. Some studies have not found associations between smoke and certain health effects, and the studies present less certainty in their assessment than DOSH relays. As such, DOSH may be overestimating health effects and the need for regulation. There seems to be no confirmed evidence, only assumption, that particulate filters reduce risks. There seems to be no consideration that respirator use may exacerbate health risks associated with heat or cardiovascular stress with increased breathing restriction, increased heart rate and blood pressure and other potential physiological burdens of respirator use (understating the human health cost). Wildfires are unanticipated and occur suddenly. If employers wait for a wildfire an enormous rush of “demand” will ensue. There may be too much demand for limited healthcare services for respirator medical clearances and respirators. Some employers may have to shut down as compliance may not be feasible in short timelines associated

with wildfires. High demand with limited supply may greatly increase costs. The only other choice is for virtually all Washington employers to enroll any and all employees who may spend an hour or more outdoors in a respirator program and maintain and rotate stocks of supplies so that they can react to emergent wildfire episodes. The need for regulation and effectiveness of controls may be lower, and the costs may be higher than DOSH seems to be suggesting.

Please consider that occupational risks appear to be limited to a relatively small number of employees with certain recognized underlying illness. The best protection for such employees is more likely to arise from a physician with a carefully considered and tailored protection regimen specific to an employee's needs under the reasonable accommodation process. Training, and provision of voluntary use respirators (and required use at the highest levels), may be a wise precaution until such time the risks and effective controls are better understood.

Please also consider the studies indicate the large majority of people at risk are people younger than 15 and older than 65. Those within working typical working age may have such significant underlying illnesses they are not in the workforce. Employers may outcompete the public for resources. A broad employer-based requirement may protect those least at risk, exposing those at most risk (the public) to unnecessary danger. A public health response with a tailored response to those most at risk is likely the best method to protect the health of Washingtonians.

Is DOSH within its regulatory authority?

The studies are public health, not occupational health. Wildfire smoke is an environmental hazard existing across broad swaths of a region. The studies are for health effects generally for 24-hour periods or longer, while a workday will generally be a fraction of the exposed period (e.g 8-hours of a 24-hour day, and 40 hours of a 168-hour week). The need for regulation as well as efficacy of controls seem to be assumed for workplaces, rather than being based upon a well-established scientific body of evidence demonstrating an occupational hazard and that proposed controls would be effective.

The US Supreme court has ruled that, “(t)he Act empowers the Secretary to set workplace safety standards, not broad public health measures.”

“OSHA’s indiscriminate approach fails to account for this crucial distinction—between occupational risk and risk more generally—and accordingly the mandate takes on the character of a general public health measure, rather than an ‘occupational safety or health standard’.”

“Although Congress has indisputably given OSHA the power to regulate occupational dangers, it has not given that agency the power to regulate public health more broadly.”

WSDOT has provided many questions in the past concerning this regulation that we have not received any response. We are resubmitting these questions, attached

herein as Appendix A, and look forward to your well-considered response to both previous and current submissions.

Sincerely,

John Gancel

WSDOT Safety Program Manager

cc: Corey Lane, CIH, WSDOT
Steve Rockwell, OR Safety Manager
Mark Bergman, ER Safety Manager
Matthew Brandon, SWR Safety Manager
Jason Pemberton, HQ Safety Officer

Appendix A

June 29, 2021

Cindy Ireland
7273 Linderson Way SW
Tumwater, WA 98501-5414
[Cindy Ireland](mailto:Cindy.Ireland@wsdot.wa.gov)

Re: Wildfire Smoke Rulemaking (Chapter 296-62-085 WAC, Wildfire Smoke)

Dear Colleague:

The Washington State Department of Transportation (WSDOT) welcomes standards that will protect the health of our valued employees and the public. We appreciate the efforts the Department of Labor and Industries, Division of Occupational Safety and Health (DOSH) has made for stakeholders to understand and contribute to possible rule making for wildfire smoke.

The Federal Occupational Safety and Health Act, and similarly the Washington Industrial Safety and Health Act, establish the following requirements for promulgating a standard¹:

1. The standard must substantially reduce a significant risk of material harm to workers.
2. Compliance must be technologically feasible.
3. Compliance with the standard must be economically feasible.
4. Health standards must eliminate significant risk or reduce a significant risk to the extent feasible.
5. Standards must employ the most cost-effective protective measures capable of reducing or eliminating significant risk; and
6. Standards must be supported by substantial evidence in the rulemaking record and be consistent with prior agency practice or supported by some justification for departing from that practice.

Having participated in stakeholder meetings, WSDOT is unsure that any of these sensible elements for rule promulgation has been clearly supported with evidence. We understand that this is an emergency regulation and the above are for normal standards, but it remains practical that a rule is necessary, effective, feasible, the most cost-effective of options, and each of those elements are supported by substantial evidence.

1. Is this rule necessary?

Please provide an analysis and access to data showing an excess risk of wildfire smoke to workers. The data presented thus far in stakeholder meetings regarding health effects appears to be environmental exposures with public health outcomes rather than specifically for workers. The sciences of toxicology and epidemiology recognize that worker populations and the general public are different, with dissimilar risks and vulnerabilities. Virtually all environmental/public health standards are lower to account for sensitive populations and their higher vulnerability to adverse health effects (e.g. children, elderly persons on oxygen, persons with severe underlying morbidity, and other at-risk populations who would not normally be expected to be in a work environment). For example, Table I, below, is a comparison of standards for carbon monoxide. Please note that this is just an example underscoring the differences in risk for public compared to worker exposure. The intention is to illustrate the well understood difference contrasting health risks for the general public and workers and that public health exposure limits are lower due to a more vulnerable population. This proposed rule may protect those least at risk to the detriment of Washingtonians who are at greatest risk (e.g., employers outcompete the general

public purchasing available respirators and filters).

Table I – Standards for Carbon Monoxide

Organization	Standard	8-hour* Exposure Limit (ppm)	Population
Environmental Protection Agency (EPA)	Primary National Ambient Air Quality Standard (NAAQS)	9	Public
Division of Occupational Safety and Health (DOSH)	Permissible Exposure Limit (TWA ₈)	35	Workers
American Council of Governmental Industrial Hygienists	Threshold Limit Value (TLV)	25	Workers
National Institute for Occupational Safety and Health	Recommended Exposure Limit	35*	Workers

- EPA NAAQS: ‘Primary standards provide public health protection, including protecting the health of “sensitive” populations such as asthmatics, children, and the elderly.’ The EPA Primary NAAQS for carbon monoxide is an 8-hour average not to be exceeded once per year.
- DOSH TWA₈: “...a standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his or her working life.” (per RCW 49.19.050)
- ACGIH TLV: “airborne concentrations of chemical substances and represent conditions under which it is believed that nearly all workers may be repeatedly exposed, day after day, over a working lifetime, without adverse health effects.”
- *NIOSH REL: a time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek for which NIOSH believes workers can be routinely exposed without adverse effect. NIOSH evaluates all known and available medical, biological, engineering, chemical, trade, and other information relevant to the hazard.
- PPM: parts per million

Another example is influenza, a significant public health risk while not considered a worker health threat requiring (emergency) regulation. The US Centers for Disease Control (CDC) estimates that influenza has resulted in between 9 million – 45 million illnesses, between 140,000 – 810,000 hospitalizations and between 12,000 – 61,000 deaths annually since 2010. Table II, below, compares the percentage of mortality by age for both influenza and wildfire smoke. We are not requesting a discussion of influenza; we are underscoring another example of the differences in risk between the public and worker populations. While influenza may affect people in working age groups, it does not indicate workers are at risk requiring regulation. The wildfire smoke epidemiology should show workers are at risk, and not be extrapolated or assumed because some affected are in working age ranges. Again, please consider this rule could protect the least vulnerable at the expense of those most vulnerable.

Table II – Mortality By Age For Influenza and Wildfire Smoke

Influenza ²		Wildfire Smoke ³	
Age	Mortality %	Age	Mortality %
0-4 years	1.2	0-4	1.3
5-17 years	0.8	5-14	0.4
18-49 years	12.2	15-44	2.9
50-64 years	23.4	45-64	18.7
65 and older	62.4	65 and older	76.6

Please discuss in detail the substantial evidence of excess risk of wildfire smoke to *workers*, distinguished from the public health data, which includes the more vulnerable population, and provide access to supporting documents.

2. Has DOSH conducted a risk analysis of the proposed standard to assure greatest overall risk reduction for workers? Some aspects of the draft rule may increase risk of adverse health effects or mortality for workers. Please provided a detailed review of the data demonstrating the proposed rule will not increase overall risks to workers. Provide access to all supporting evidence.

a. A number of stakeholders indicated they would likely need to shut down work during elevated smoke episodes. According to data from the [National Safety Council](#)⁴, “more than 9 out of 10 deaths and 80% of the medically consulted injuries suffered by workers in 2019 occurred off the job. While over 16 times the number of deaths occur off the job than on the job (16.6 to 1), four times as many medically consulted injuries occur off the job (4.11 to 1). Production time lost due to off-the-job injuries totaled about 365,000,000 days in 2019, compared to 70,000,000 days lost by workers injured on the job. Production time lost in future years due to off-the-job injuries in 2019 will total an estimated 745,000,000 days, more than 13 times the 55,000,000 days lost in future years from on-the-job injuries in 2019. Off-the-job injuries to workers cost society at least \$443.9 billion in 2019, compared with \$171.0 billion for on-the-job injuries.” This data has been similar and relatively stable over the decades NSC has been conducting the analysis. Has DOSH assessed the excess worker mortality if businesses shut down during smoke events and might it create more risk for workers if businesses temporarily shut down due to smoke episodes? If workers are sent home, they are 1,700% more likely to die and 400% more likely to experience medically consulted injuries. Please provide a detailed analysis that the proposed rule will reduce overall risk to workers, compared to the far greater risks to workers when at home or in public with the understanding that many employers may close or send workers home during wildfire smoke due to the rule.

b. The DOSH proposed rule relies on voluntary use of respiratory protection. Respiratory protection is known to create a physiological burden on users. The medical questionnaire in WAC 296-842 indicates workers with underlying cardiovascular and respiratory illness are at increased risk of adverse health outcomes by wearing respiratory protection, many of which are the same for those at risk for effects from wildfire smoke. [DOSH’s wildfire smoke page](#)⁵ states “workers with breathing problems like **asthma or COPD** (emphasis added), or with chronic heart and lung disease should ask their doctor whether it’s safe for them to voluntarily wear a dust mask or other type of protection at work. Dust masks restrict breathing and can put stress on the heart and lungs, which may worsen health symptoms”. One of the studies³ DOSH is using as

support for rule making states “however, populations with underlying health conditions, and in particular, **asthma and COPD (emphasis added)**, have been found to be more susceptible to wildfire smoke compared to healthy populations in several studies examining hospital admissions and ED visits” (please note that when addressing dust masks, the authors indicate limitations in data regarding respirator use “the majority of testing has been performed in small samples of healthy young adults”, nor did the studies include exposure to both stressors at once, partial period use of dust masks during smoke exposure, elevated heat conditions, persons with more significant underlying illness, and most importantly – indicated a person experiencing discomfort could remove the respirator, which would then result in exposure to smoke.).

- i. Have potential additive or synergistic adverse health outcomes been evaluated for these two types of cardiovascular and respiratory burden when combined? Dust mask use will greatly increase under the proposed standard. Workers can sustain all the physiological burden from wearing a respirator, and still be exposed to most or all physiological burden by smoke (inconsistent or improper use, not fit tested under voluntary use conditions, dust masks do not filter gasses, etc.) Please provide a detailed analysis demonstrating voluntary use of filtering facepiece respirators reduces overall risk and does not have additive or synergistic adverse health effects, especially for populations at risk (asthma, COPD, etc.).

3. Will the controls in the standard reduce risk for workers? Please provide a detailed analysis demonstrating the proposed standard will significantly reduce material harm to workers and provide access to supporting documents. Please include, though not limit the answer to the following matters.

- a. Has the use of a respirator for a portion of the day been shown to significantly reduce risk? (e.g., a worker may wear a respirator for 8 hours at work but not during remaining 16 hours a day, presumably in elevated smoke conditions).
- b. Is DOSH assuming use of dust masks will reduce risk, or is there evidence demonstrating use of dust masks reduces risk? Wildfire smoke is made of both particulates and gasses. Filtering facepiece respirators provide no protection from gasses. Please review any and all evidence to demonstrating filtering facepiece respirators will eliminate or reduce significant risk to workers, even when worn for only part of the exposure period (e.g., 8 hours of a 24-hour day).
- c. DOSH stated that no follow-up study has been conducted to demonstrate the California wildfire smoke standard reduced risk. Please review any and all data that demonstrates reduced risk for workers with each of the proposed controls.

4. Has DOSH relied on public health data and environmental air monitoring to establish worker health standards previously? If no, is there an explanation, based on substantial evidence of risk to workers for departing from previous practice in establishing workplace safety and health standards? Please review the data in detail and provide access to supporting information.

5. Is the proposed rule the most cost-effective protective measure? Please provide a detailed risk and cost analysis with evidence of reduced risk and provide access to supporting evidence. In your response, please include an evaluation of using reasonable accommodation as a potentially more effective control measure.

- a. Benefits of control through reasonable accommodation can include:

- i. If workers may be at risk, it is likely a very small number with recognized underlying health conditions.
- ii. A licensed healthcare provider is the best person to assess the dual risks of respiratory protection use and wildfire smoke risk. Requirements may be more protective or more permissive but provide the best overall health outcome for the employee. A rule could simply include providing training well before wildfire season regarding health risks and the reasonable accommodation process.
- iii. Employers will have more ability to stock an appropriate amount of dust masks as needs are identified in advance, and likely result with less waste and leave more stock for members of the public who would not otherwise have access to dust masks in the event of regional employer buyouts of stock.
- iv. The increased ability to plan with greater accuracy in advance, targeting protection for those who need it and not wasting it on those who do not, will prevent unnecessary workplace shutdowns, benefitting both employees and employers with less financial detriments to both.

6. Is the science sufficiently established and reliable? RCW 49.17 requires that promulgation of standards must be based on “best available evidence”.

- a. One of the recent studies on health effects of wildfire smoke³, published in 2020, stated “...the health effects associated with wildfire smoke exposure are ***just beginning to be understood*** (emphasis added)”. As the body of scientific evidence is just beginning to be understood, could a better standard be promulgated once the science is well-established for risks and proper controls?
- b. A large body of science has confirmed positive finding bias in the literature^{6,7,8}. The World Health Organization recently issued a joint statement⁹ for publication of all results of human clinical trials, indicating almost 50% of clinical trials go unpublished, often because they are negative: “Negative and inconclusive as well as positive results must be published or otherwise made publicly available”. In addition to the ethical imperative, poor allocation of resources for product development and financing of available interventions, and **suboptimal regulatory and public health recommendations may occur where decisions are based on only a subset of all completed clinical trials.** (emphasis added) “Publication bias can make scientific literature unrepresentative of the actual research studies. **This can give the reader a false impression about the beneficial effects of a particular treatment or intervention...**(emphasis added)⁸. Clinical medicine and toxicology may represent some of the strongest positive finding publication bias¹⁰. Has DOSH conducted due diligence to find all relevant evidence, including studies with inconclusive or negative findings for wildfire smoke, either published or not published? Please describe your information gathering methodology and provide access to any and all relevant scientific information, including negative and inconclusive findings. RCW 49.17 requires “best available evidence”, not just those that support a desire to regulate.
- c. “There is increasing concern that in modern research, false findings may be the majority or even the vast majority of published research claims. However, this should not be surprising. It can be proven that most claimed research findings are false”¹¹. The author is a Stanford professor of medicine, epidemiology, and population health.
- d. Science is a human endeavor and has its imperfections. It can be prone to false positive findings, and prone to positive finding publication bias, distorting the truth. Many of the

studies of which DOSH is relying upon indicate limitations and uncertainties. Is the scientific body of evidence of sufficient power and reliability, in this early stage of research, to draw dependable conclusions on the hazard and effective controls? Has DOSH sought outside expertise in scientific research to validate the quality and reliability of the evidence?

- e. DOSH has provided eight (8) references to support the standard. For comparison, Federal OSHA’s preamble for silica (Federal Register / Vol. 81, No. 58)¹² referenced over three thousand supporting documents. A quote from the rule promulgation materials in the silica standard “(t)here have been literally thousands of research studies on exposure to crystalline silica in the past 30 years.” Is there sufficient evidence on the hazards, populations at risk, and efficacy of controls been established for a necessary and effective rule?

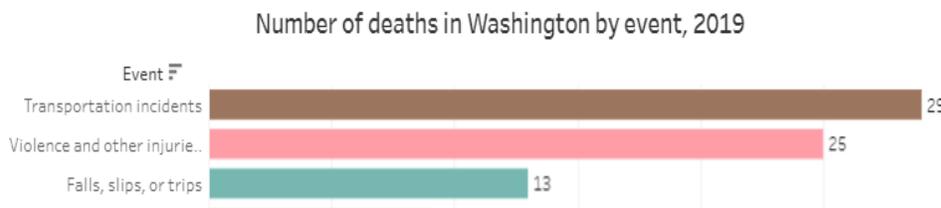
7. Can our state invest in prevention for superior health and resource management rather than resort to the least effective, last choice, of PPE?

Compliance with the proposed standard will create large costs to taxpayers with thousands of government employees requiring training, costs for PPE, disruptions to work, etc. Has Washington State considered if those costs to taxpayers would be more effective in wildfire prevention and efficient response to minimize wildfire? The “hierarchy of controls” is the preferred approach to hazard control. The proposed standard relies on PPE, the least effective, last choice in hazard control.

8. Is rule promulgation for wildfire the highest priority for workers in Washington State?

RCW 49.17.010 (purpose) states: “The legislature finds that personal injuries and illnesses arising out of conditions of employment impose a substantial burden upon employers and employees in terms of lost production, wage loss, medical expenses, and payment of benefits under the industrial insurance act.” Please review, in detail, the recognized injuries and illness from wildfire smoke in “conditions of employment”, as well as lost production, wage loss, medical expenses, and payments, in comparison to other recognized sources of worker injuries and illnesses. Provide access to all supporting data.

- a. The information below is from the National Safety Council¹³, work deaths by state, showing the top three sources.



- b. The information below is from the 2020 Liberty Mutual Workplace Safety Index¹⁴ showing the top 10 sources of most disabling injuries

U.S. businesses spend *more than one billion dollars a week* on serious, nonfatal workplace injuries.



*Typically involving a car or truck
 Understanding top risks in the workplace is the first step to protecting your business. The Liberty Mutual Workplace Safety Index helps employers, risk managers, and safety practitioners make workplaces safer by identifying critical risk areas so that businesses can better allocate safety resources.

9. The draft rule defines “sensitive groups” but does not have specific requirements associated with the definition. Please clarify the purpose and any requirement under the proposed standards for “sensitive groups” and how to determine which employees may meet these criteria.
10. As part of administrative controls employers may be required to reduce exposure times or decrease work intensity to lower breathing and heart rates. With the varying ages, genders, fitness and work activities of employees, how does the employer control the amount of work that each employee works to lower their individual breathing and heart rates? How much of a reduction would be sufficient? Please provide specific and objective requirements and provide access to supporting evidence that demonstrates sufficient efficacy for employee protection.
11. In draft rule section WAC 296-62-08580 Respiratory Protection 1(c) (and in other locations in the rule), there is an indication that the KN95 respirator can be used in place of the N95 respirator if the N95 is not readily available. In the stakeholder meetings, it was discussed that this language would be changed to allow the use of the KN95’s in place of the N95’s. This does not seem to have been addressed in this version of the rule. If this is the language that is to be left in the rule, the question becomes what does readily available indicate? On a particular job site? Within the employer’s possession? Readily available according to the manufacturer? The standard should allow respirators similarly approved in other countries per CDC “Strategies for Optimizing the Supply of N95 Respirators”, and not just be limited to KN95s. Please clarify.
12. The draft rule section WAC 296-62-08570, Exposure controls (3), exemptions are made for emergency response. WSDOT has employees that assist with the emergency by providing traffic control and Incident Response and other supporting functions. Are such operations included as those in paragraph (3)? This section is worded as to include utilities, communications, and medical operations, when such operations are directly aiding firefighting or emergency response. Please include employees that are providing direct support for firefighting activities including but not limited to traffic control, incident response, and similar activities.
13. Please clarify and provide objective standards for when an employer should “reasonably anticipate that employees may be exposed to wildfire smoke”. There is always some level of non-wildfire smoke source of PM 2.5, and during fire season some fraction of PM 2.5 that may or may not be contributing to PM 2.5. The EPA defines sources of particulate matter to include construction sites, unpaved roads, fields, smokestacks, fires, and particles that form in the atmosphere as a result of complex reactions of chemicals such as sulfur dioxide and nitrogen oxides, which are pollutants emitted from power plants, industries and automobiles. When exactly does the standard apply; a single particle of wildfire smoke, a majority (>50%) of PM

2.5 is reasonably attributable to wildfire smoke, or an AQI of 69 plus average AQI during a comparable period? For example, an AQI of 74 (PM2.5) was recorded in Tumwater, Washington on June 28th, 2021, at 12 pm. While we do not believe it is attributed to wildfire smoke, there is a wildfire SE of Portland, Oregon (S-503 fire) which may contribute some tiny fraction of PM 2.5. How can an employer reasonably determine when the standard is applicable?

14. DOSH published the proposed emergency rule after the close of business on June 24, 2021. This leaves only three business days for review and comment. More time for review and comment will result in a superior rule making process which would be better for all Washingtonians.

We appreciate efforts to reduce risk for Washingtonians and workers. We eagerly anticipate your well-considered response.

Sincerely,

John Gancel
WSDOT Safety Program Manager

cc:

References

¹ Schneid, Thomas, Safety Law: Legal Aspects in Occupational Safety and Health, Boca Raton, FL, CRC Press.

² Centers for Disease Control and Prevention. (2021). Percentage of Influenza-related burden by age group, 2019-2020 Influenza Season. U.S. Department of Health and Human Services. <https://www.cdc.gov/flu/about/burden/2019-2020.html>

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