

Comments on Wildfire Smoke Exposure rule changes – from Stakeholder meetings  
Scott Tomren, WSU Tri-Cities

After attending the August 10, 2022 Stakeholder meeting for the Wildfire Smoke Exposure rulemaking, and based on the assumption that the current emergency rule will form the basis for the new permanent rule, Washington State University Tri-Cities respectfully requests consideration of the following comments:

- The wildfire smoke rule bases its action levels on the PM<sub>2.5</sub> concentration, which already has an established Permissible Exposure Limit (PEL) under WAC 296-841, Airborne Contaminants. The emergency rule requires a complete respiratory protection program at a level that is significantly less than this PEL (~11% of the PEL). This level is already significantly lower than the PEL for any of the other particulates having an established level in WAC 296-841, including metals, minerals, oils, pesticides, and welding fumes. Because these levels are reached relatively infrequently, compliance with the emergency rule has not been overly burdensome.
- It was further suggested that partial respiratory protection programs should be implemented at levels ranging from 0.7 to 4.0% of the PEL (35.5 to 200.9 ug/m<sup>3</sup>), and a full respiratory protection program at 3.0 to 10% of the PEL (150.5 to 500.4 ug/m<sup>3</sup>). Considering the already very low trigger level in the emergency rule, adopting any lower level seems excessive, and will create significantly greater burden to ensure the proper programs are in place and that employees are annually trained and evaluated.
- From a practical perspective, employers will need to meet some portion of the requirements – possibly including a full respiratory protection program – *before* wildfire season. This may mean employers incur this burden even in years when smoke conditions never actually make it necessary – as would have occurred in 2020.
- PM<sub>2.5</sub> concentration is the trigger for the rule, and the emergency rule currently establishes its scope as when “employees may be exposed to a PM<sub>2.5</sub> concentration of 20.5 ug/m<sup>3</sup> or more for wildfire smoke.” However, PM<sub>2.5</sub> for wildfire smoke is indistinguishable from other sources of PM<sub>2.5</sub>. In some areas, windblown dust, vehicle exhaust, wood-burning stoves, or other sources may be significant contributors. Since these cannot be distinguished, employers are forced to implement controls whenever the indicated concentrations are reached, regardless of whether the source is wildfire. (Note: this may be evidenced by the chart of PM<sub>2.5</sub> concentrations at Sunnyside, shared during the Stakeholder meeting. This location consistently exceeds 20 days per year at 20.5 ug/m<sup>3</sup> or more, while the other sites exceed that value only once at one location. Sunnyside frequently gets windblown dust from the Horse Heaven hills.)
- The description of a “partial respirator program” provided is not significantly different from a full program. Slide 27 of the Stakeholder presentation indicates 6 elements of a full program, and 3-4 elements of a partial program. However, requiring the use of respirators implies fit testing of some variety, regardless of the results of a medical evaluation, and fit testing necessitates the shaving of facial hair. The only element which would apparently no longer be required is the written program, but most entities would need to write policy surrounding the other elements anyway, so there is likely no decreased burden of a “partial” program.
- 296-62-08580 effectively ignores the “hierarchy of controls” concept. It mandates provision of PPE at threshold levels without consideration of the possibility of engineering or administrative

Comments on Wildfire Smoke Exposure rule changes – from Stakeholder meetings  
Scott Tomren, WSU Tri-Cities

controls. Accommodating these alternatives would protect employees without creating requirements for continuous monitoring of PM<sub>2.5</sub> concentrations and adjustment as various trigger values are reached.

- The rule should not use discrete measurements as the trigger, but should use exposure levels such as time-weighted averages. Consider an employee performing soil sampling and testing. If that employee samples soil 1 hour in the morning and 1 hour in the afternoon when the smoke concentration exceeded 500 ug/m<sup>3</sup>, a respirator would be required. The same employee could test the soil samples indoors for the remaining 6 hours, with dust levels of 4,000 ug/m<sup>3</sup>, and would *not* be required to wear a respirator in spite of being exposed to 8 times the level of PM<sub>2.5</sub>. The combined exposure for the 8-hour shift would fall well below the particulate PEL, but the employee would be required to wear a respirator for the 2 hours with the *lowest* exposure.
- From the charts of monitoring data provided in the Stakeholder presentation, days with high PM<sub>2.5</sub> concentrations are increasingly rare with increasing concentration. Lower trigger thresholds for respiratory protection programs will be increasingly cumbersome, particularly for employers in central and eastern Washington, where elevated concentrations occur roughly twice as often.
- None of the sites featured in the Stakeholder presentation show recurrent patterns of elevated concentrations. Two (Chelan in 2018 and Winthrop in 2021) show elevated concentrations for more than 2 weeks, likely due to fires in close proximity. There was little impact in 2019, and broad (but not extended) impact in 2020. None of this shows a pattern that appears to necessitate statewide regulation.

Comments on Wildfire Smoke Exposure rule changes – from Stakeholder meetings  
 Scott Tomren, WSU Tri-Cities

Location	Days exceeding indicated level															
	2018				2019				2020				2021			
	>35.5	>150.5	>250.5	>500	>35.5	>150.5	>250.5	>500	>35.5	>150.5	>250.5	>500	>35.5	>150.5	>250.5	>500
<b>Chelan</b>	32	15	6	1	0	0	0	0	13	7	5	3	7	0	0	0
<b>Spokane</b>	24	2	2	0	7	0	0	0	10	6	4	2	21	2	0	0
<b>Sunnyside</b>	29	2	1	0	4	0	0	0	17	9	5	1	38	1	1	0
<b>Winthrop</b>	33	4	2	0	3	0	0	0	12	4	0	0	33	18	15	0
<b>Seattle</b>	19	0	0	0	2	0	0	0	15	6	1	1	3	0	0	0
<b>Vancouver</b>	8	0	0	0	3	0	0	0	13	8	8	3	3	0	0	0

Location	Days exceeding indicated level			
	4-year Average			
	>35.5	>150.5	>250.5	>500
<b>Chelan</b>	12.7	5.5	2.75	1
<b>Spokane</b>	15.5	2.5	1.5	0.5
<b>Sunnyside</b>	22	3	1.75	0.25
<b>Winthrop</b>	20.25	6.5	4.25	0
<b>Seattle</b>	9.75	1.5	0.25	0.25
<b>Vancouver</b>	6.75	2	2	0.75