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Senior Industrial Engineer  
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California DOSH of Industrial Relations  
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Dear Ms. Neidhardt:

Thank you for the opportunity to review and provide comments on the draft proposed revisions to Emergency Regulation 5141.1, Wildfire Smoke Emergency Regulation.

San Diego Gas and Electric (SDG&E) has established programs in place to protect employees from airborne contaminants. We are concerned that the regulation as drafted will have significant impacts on critical response operations during wildfire events. We appreciate your collaboration with stakeholders on the permanent rulemaking to provide a safe and healthy work environment for all employees.

San Diego Gas and Electric offers comments to the permanent standard in the below sections. Recommended additions/revisions to the current language are shown in **underlined and bold green** font and recommended deletions are shown in **blue highlighted strikethrough** font. The rationale for proposed changes are shown in *italicized* font.

## **I. Comments for “Version 2.0” Permanent Regulation**

### **A. Subsections (a) Scope (1)(A) and (a) Scope (2)(C)**

(1) This section applies to workplaces where:

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

(2) The following workplaces and operations are exempt from this section:

(C) The employer demonstrates that the concentration of PM2.5 in the air does not exceed a concentration that corresponds to a current AQI of **100 151** or greater by measuring PM2.5 levels at the worksite in accordance with Appendix A.

*Rationale: SDG&E is concerned about the use of an index developed for public health guidance, not an exposure limit developed for worker health protection. Occupational exposure limits for PM2.5 should be derived from a comprehensive health risk assessment as*

*occupational exposure limits are determined for other regulated chemicals. Based on the health risk assessment, the occupational exposure limits should address an eight-hour Time Weighted Average, ceiling, and/or short-term exposure limits for PM2.5 exposures. These integrate an exposure concentration and a duration. 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 for PM2.5 levels below 150 are intended to convey warnings to sensitive population groups, including people who have heart or lung disease, older adults, and children.*

#### **B. Subsection (a) Scope (2)(B)**

(a)(2)(B) Enclosed vehicles in which the air is filtered by a cabin air filter and the employer ensures that windows, doors, and other openings are kept closed to minimize contamination by outdoor or unfiltered air, **or enclosed vehicles in which no cabin air filter exists but the air recirculation feature is used to reduce intake of outdoor air:**

*Rationale: Approximately 82% of the vehicles our critical responders drive are not equipped with cabin air filters and will require filtration system modifications. In some cases, filtration system modifications are not possible. SDG&E recommends language which allows the recirculation feature as an option when operating vehicles.*

#### **C. Subsection (f) Control of Harmful Exposure to Employees (1)**

(f)(1) 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.

*Rationale: Emergency response operations, including situations where electric and gas employees need to quickly make an area safe for other emergency responders or provide essential power, gas, water or communication for emergency response, may be delayed if mandatory elements associated with respiratory protection are required (e.g. fit testing, shaving). SDG&E strongly suggests removing the mandatory respirator requirement for utility emergency response operations.*

#### **D. Subsection (f)(4)(B):**

(f)(4)(B) Where the current AQI for PM2.5 exceeds 500, respirator use is required 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~~ **such that the PM2.5 levels inside the respirator do not exceed an AQI of 500.**

*Rationale: Mandatory respirator use for PM2.5 exposures should be addressed through the hierarchy of controls and should be triggered when the occupational exposure limit for PM2.5 is exceeded. As previously stated, the AQI for PM2.5 is not an occupational exposure*

*limit. Respiratory protection requirements should be implemented based on occupational health standards which are established to prevent occupational illnesses from occurring by controlling employee exposures at or below that level.*

*As the current regulation reads, the in-mask concentration of PM2.5 must be less than an AQI of 150, which is approximately 55 ug/m<sup>3</sup>. This is significantly lower than the exposure that may occur if employees do not voluntarily wear a respirator until mandatory respirator use is enforced above an AQI of 500, which is approximately 500 ug/m<sup>3</sup>. Additionally, once the airborne concentration of PM2.5 exceeds 550 ug/m<sup>3</sup>, respirators with assigned protection factors of 10 (e.g. N95 filtering facepieces) would not be considered as providing adequate in-mask protection. Such exposures would require the use of other respirators such as the powered air purifying respirator (PAPR) having an assigned protection factor of 25. Note that the current regulation states N95 filtering facepieces are acceptable up to an AQI for PM2.5 of 500, the maximum AQI that may be reported at some air management districts. The level of respiratory protection should be determined in accordance with Title 8 CCR Section 5144, similar to how other airborne exposures are controlled when respirators are required.*

*Another issue is that there is limited availability of respiratory protection suitable for use where there are hazards of electric shock and arc. We are not aware of any respirators having arc ratings for thermal protection currently on the market. Further, there are limited disposable filtering facepieces available that are flame resistant. SDG&E commissioned ArcWear a prominent arc hazard consultant in Louisville, Kentucky, to test four N95 filtering facepiece models for ignition, melting, or dripping when exposed to various arc incident energy levels. Two flame resistant (FR) model facepieces did not ignite at 9.7 calories/cm<sup>2</sup>, but straps on a majority of masks melted. Two non-flame resistant (NonFR) masks and straps ignited, melted, and/or dripped at various arc energies.*

*Based on the current regulation, there may be situations where employees may be required to wear powered air purifying respirators (PAPRs) to comply with this subsection. Class E rated hard hats (tested up to 20,000 Volts) are required for the electrical work our employees perform. The built-in hard hats in PAPRs are Class G and are only rated for work up to 2,200 volts.*

## **II. Comments for “Version 3.0” Red Bold Underlined Text with Yellow Highlight**

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

(a)(1)(A) The current Air Quality Index (current AQI), for PM2.5 is ~~100~~ **151** or greater, regardless of the AQI for other pollutants; and

[SDG&E also recommends removing references in (a)(2)(C), (a)(2)(D), and (a)(4) to an AQI for PM2.5 of 100.]

*Rationale: SDG&E is concerned about the use of an index developed for public health, not worker health. Exposure limits for PM2.5 should be derived from a comprehensive health*



*risk assessment as occupational exposure limits are determined for other regulated chemicals. Based on the health risk assessment, the occupational exposure limits should address an eight-hour Time Weighted Average, ceiling, and/or short-term exposure limits for PM2.5 exposures. 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 for PM2.5 levels below 150 are intended to convey warnings to sensitive population groups, including people who have heart or lung disease, older adults, and children.*

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

*Rationale: Most of our buildings have HVAC systems equipped with MERV 7 or 8 rated filters. Fan and filter modifications would be required for higher MERV ratings and in some cases, system upgrades may not be possible. SDG&E recommends DOSH requires employers to provide MERV rated filters consistent with proper operation of their equipment, rather than specifying the MERV rating.*

**C. Subsections (a)(3) and (c):**

**(a)(3) and (c)** - Delete these subsections.

*Rationale: Setting another level of requirements for employers unnecessarily complicates the regulation. The AQI for PM2.5 of 100 should not be used as a threshold. As previously mentioned, exposure limits for PM2.5 should be derived from a comprehensive health risk assessment, similar to how occupational exposure limits are determined for other regulated chemicals. Based on the health risk assessment, the occupational exposure limits should address an eight-hour Time Weighted Average, ceiling, and/or short-term exposure limits for PM2.5 exposures. 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 for PM2.5 levels below 150 are intended to convey warnings to sensitive population groups, including people who have heart or lung disease, older adults, and children .*

**D. Subsection (f)(4(A):**

Where the current AQI for PM2.5 exceeds ~~300~~500, 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. ~~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.~~

*Rationale: SDG&E strongly discourages lowering the AQI for PM2.5 threshold below 500 without a risk assessment confirming the health effects from PM2.5.*

**E. Subsection (f)(4)(B) EXCEPTION:**

EXCEPTION to subsection (g)(4)(B): Respirator use is not required if ~~the employer demonstrates that the~~ employees are exposed to arc flash hazards **and arc-rated respiratory protection is not available or feasible to use.** ~~that arc-rated face shields, or hoods worn over a respirator, would create a greater hazard to the employee than exposure to PM2.5 without a respirator.~~

*Rationale: Arc flash hazards are undeniably more hazardous than exposures to PM2.5. Electric employees who are engaged in emergency response operations are required to wear arc-rated PPE when working around energized equipment, such as making areas safe during a wildfire event. There are no arc-rated respirators available in industry. SDG&E strongly encourages removing the mandatory respirator requirement for utility employees engaged in wildfire response operations.*

**III. Cost Estimates**

The following are initial estimated costs for SDG&E to implement this program and do not include future annual costs:

PAPR purchase	\$100,000
Training (employee time)	35,000
N95 purchase	20,000
Medical evaluation	20,000
Fit testing	15,000
<b>Total</b>	<b>\$190,000</b>

In conclusion, SDG&E recognizes the importance of regulatory requirements to reduce injuries and illnesses from wildfire smoke exposures, and we will continue to provide and encourage the use of filtering facepieces. We appreciate the opportunity to submit comments and recommendations.

Sincerely,



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cc: Eric Berg  
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