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November 7, 2022

*Submitted via email to [dli.regulations+HS@maryland.gov](mailto:dli.regulations+HS@maryland.gov).*

Dear Acting Deputy Commissioner Vanreusel:

The Natural Resources Defense Council (NRDC) is writing on behalf of our more than 18,800 supporters in Maryland to express deep concern about the proposed heat stress standard released by Maryland Occupational Safety and Health (MOSH) on October 7, 2022.<sup>1</sup> As NRDC testified to MOSH in September 2021,<sup>2</sup> Maryland workers urgently need a strong, enforceable standard to protect them from occupational heat. We appreciate MOSH's effort to develop the standard by the deadline set out in House Bill 722, especially during a pandemic. However, the current proposal is neither strong nor enforceable. If MOSH implements it, workers will continue to needlessly suffer from preventable heat-related illnesses, injuries, and deaths.

**MOSH must withdraw its inadequate proposal and develop a new one that will effectively protect workers from unhealthy heat.**

We are particularly concerned about these elements in the proposed standard:

- The dangerously high temperature threshold.
- The lack of enhanced requirements during extreme heat events.
- The exemption of entire classes of highly vulnerable workers.
- The deference given to employers about how, when, and where to provide basic life-saving heat protections.

Recommendations to address each of these concerns are below.

### **MOSH Must Lower the Temperature Threshold**

The proposal says that the heat standard applies when “(1) The heat index reaches or exceeds 88 degrees Fahrenheit; *and* (2) Where the presence of external influencing factors increases the potential for serious heat-related illness” (emphasis added).

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<sup>1</sup> Title 09, Maryland Department of Labor, Subtitle 12 Division of Labor & Industry, 09.12.32 Heat Stress Standards, *Maryland Register* 49 no. 21 (October 7, 2022): 953-954, <https://www.dlir.state.md.us/labor/mosh/comar.09.12.32.pdf>.

<sup>2</sup> Teniope Adewumi-Gunn, “Maryland Workers Need Strong, Enforceable Heat Protections,” September 23, 2021, NRDC, <https://www.nrdc.org/experts/teniope-adewumi-gunn/maryland-workers-need-strong-enforceable-heat-protections>

That temperature threshold is dangerously high, even without the addition of “external influencing factors” as defined in the proposal by MOSH. A recent meta-analysis of 570 occupational heat deaths in the United States found that 96 percent of civilian deaths and 99 percent of military deaths occurred at or above a heat index of 80°F. However, the study found that any heat index over 60°F could be dangerous, “especially when workers perform very heavy physical activity or wear clothing that inhibits heat dissipation.”<sup>3</sup> Another new study of nearly 92,000 traumatic injury claims in Oregon found that the incident rate ratio of injuries increased when the maximum heat index was 75°F or more. In Washington state, regulators are planning to reduce the temperature threshold of their existing heat rule from 89°F<sup>4</sup> to 80°F,<sup>5</sup> after an analysis prompted by a June 2021 petition from stakeholders.<sup>6</sup>

MOSH should use a heat index of no more than 80°F to trigger provisions in the heat standard for workers wearing regular clothing. The threshold should be even lower for workers in vapor-barrier or other heat trapping clothing or personal protective equipment.<sup>7</sup>

### **The Standard Must Include More Stringent Requirements During Extreme Heat**

The proposal does not require enhanced protections during heat advisories or excessive heat warnings,<sup>8</sup> which ignores the best available evidence and existing guidelines on occupational heat hazards. MOSH should review existing state (particularly Oregon<sup>9</sup>) and military<sup>10</sup> heat standards, and recommendations from the National Institute of Occupational Safety and Health<sup>11</sup> and American Conference of Governmental Industrial Hygienists<sup>12</sup> as it prepares a new proposal.

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<sup>3</sup> Zaw Maung and Aaron W. Tustin, “The Heat Death Line: Proposed Heat Index Alert Threshold for Preventing Heat-Related Fatalities in the Civilian Workforce,” *NEW SOLUTIONS: A Journal of Environmental and Occupational Health Policy* 30, no. 2 (2020): <https://doi.org/10.1177/1048291120933819>.

<sup>4</sup> Washington State Department of Labor & Industries (hereinafter L&I), WAC 296-62-095 Outdoor Heat Exposure, [https://lni.wa.gov/safety-health/safety-rules/chapter-pdfs/WAC296-62.pdf#WAC\\_296\\_62\\_095](https://lni.wa.gov/safety-health/safety-rules/chapter-pdfs/WAC296-62.pdf#WAC_296_62_095).

<sup>5</sup> L&I, “Ambient Heat Exposure Stakeholder Meeting,” August 31, 2022, [https://lni.wa.gov/safety-health/safety-rules/rulemaking-stakeholder-information/\\_ambient-heat-docs/Ambient-Heat-Stress-Aug31-Presentation.pdf](https://lni.wa.gov/safety-health/safety-rules/rulemaking-stakeholder-information/_ambient-heat-docs/Ambient-Heat-Stress-Aug31-Presentation.pdf).

<sup>6</sup> L&I, “Preproposal Statement of Inquiry: Ambient Heat Exposures in All Industries,” August 17, 2021, <https://lni.wa.gov/rulemaking-activity/AO21-33/2133CR101.pdf>.

<sup>7</sup> Occupational Safety and Health Administration, “OSHA Technical Manual (OTM) Section III: Chapter 4,” updated September 15, 2017, <https://www.osha.gov/otm/section-3-health-hazards/chapter-4>.

<sup>8</sup> Maryland Department of Health, “Extreme Heat Emergency Plan 2022 Version 1.0,” 2022, <https://health.maryland.gov/preparedness/Documents/MDH%20Extreme%20Heat%20Emergency%20Plan%202022.pdf>.

<sup>9</sup> Oregon Occupational Safety & Health Division, “Oregon OSHA’s Adoption of Rules to Address Employee and Labor Housing Occupant Exposure to High Ambient Temperatures,” May 9, 2022, <https://osha.oregon.gov/OSHArules/adopted/2022/ao3-2022-letter-alh-heat.pdf>.

<sup>10</sup> E.g., Department of the Army, “Heat Stress Control and Heat Casualty Management,” TB MED 507, April 12, 2022, [https://armypubs.army.mil/epubs/DR\\_pubs/DR\\_a/ARN35159-TB\\_MED\\_507-000-WEB-1.pdf](https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN35159-TB_MED_507-000-WEB-1.pdf).

<sup>11</sup> Brenda Jacklitsch, Kristin Musolin, and Jung-Hyun Kim, *Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments. Revised Criteria 2016*, National Institute of Occupational Safety and Health, 2016, <https://www.cdc.gov/niosh/docs/2016-106/default.html>.

<sup>12</sup> American Conference of Governmental Industrial Hygienists “Heat Stress and Strain,” accessed November 6, 2022, <https://www.acgih.org/heat-stress-and-strain-2/>.

Note that it is becoming increasingly urgent to include extreme heat procedures as Maryland experiences a rise in the frequency and intensity of extremely hot days due to climate change.<sup>13</sup>

### **The Standard Must Protect All Workers**

Section .02 (B) (2) of the proposal exempts workers engaged in “emergency operations that are directly involved in the protection of life or property, or the restoration of essential services, such as evacuation, rescue, medical, structural firefighting, law enforcement, utilities, and communications, when employees are engaged in those emergency operations.”

We understand the inclination to ensure that emergency and restoration operations can proceed as smoothly as possible. However, the workers exempted in the proposed standard are themselves highly vulnerable to heat-related illnesses and injuries because of their need for heavy protective clothing and the intense physical nature of emergency work. For example, a recent survey of more than 400 U.S. and Canadian electric utility workers found that about 43 percent were at high risk for heat stress.<sup>14</sup> During the 2010 Deepwater Horizon disaster, law enforcement workers accounted for the greatest share of self-reported heat-related symptoms among response personnel.<sup>15</sup>

Furthermore, heat stress can reduce cognitive function.<sup>16,17</sup> Emergency workers experiencing heat stress may be more prone to mistakes that damage critical equipment or endanger themselves or the people they are trying to help.

Finally, immigrant workers—including those who are undocumented—are increasingly engaged in disaster response and recovery.<sup>18</sup> Those workers already face disproportionate health and safety harms on the job, frequent wage theft, and the threat of retaliation by employers.<sup>19</sup> Entirely exempting emergency response and

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<sup>13</sup> Maryland Commission on Climate Change, *2021 Annual Report and Building Energy Transition Plan*, 2021, <https://mde.maryland.gov/programs/air/ClimateChange/MCCC/Documents/2021%20Annual%20Report%20FINAL%20%282%29.pdf>.

<sup>14</sup> The assessment of heat risk included questions about work intensity, clothing, indicators of heat strain, and other factors. Andreas D. Flouris et al., “Determinants of Heat Stress and Strain in Electrical Utilities Workers Across North America as Assessed by Means of an Exploratory Questionnaire,” *Journal of Occupational and Environmental Hygiene* 19, no. 1 (2022): 12-22, <https://doi.org/10.1080/15459624.2021.2001475>.

<sup>15</sup> Elizabeth A. Erickson et al., “Environmental Heat Exposure and Heat-Related Symptoms in United States Coast Guard Deepwater Horizon Disaster Responders,” *Disaster Medicine and Public Health Preparedness* 13, no. 3 (2019): 561-569, doi:10.1017/dmp.2018.120.

<sup>16</sup> Leonidas G. Ioannou et al., “The Impacts of Sun Exposure on Worker Physiology and Cognition: Multi-Country Evidence and Interventions,” *International Journal of Environmental Research and Public Health* 18, no. 14 (2021): 7698. <https://doi.org/10.3390/ijerph18147698>.

<sup>17</sup> Elisa F. D. Canetti et al., “Psychological, Physical, and Heat Stress Indicators Prior to and After a 15-Minute Structural Firefighting Task,” *Biology* 11, no. 1 (2022): 104, <https://www.mdpi.com/2079-7737/11/1/104>.

<sup>18</sup> E.g., Maria Sacchetti, “Florida Needs Workers to Rebuild After Ian. Undocumented Migrants Are Stepping In,” *Washington Post*, October 23, 2022, <https://www.washingtonpost.com/immigration/2022/10/23/florida-hurricane-ian-migrant-workers/>.

<sup>19</sup> Juanita Constible et al., *On the Front Lines: Climate Change Threatens the Health of America’s Workers*, NRDC, 2020, <https://www.nrdc.org/sites/default/files/front-lines-climate-change-threatens-workers-report.pdf>.

recovery workers from heat protections adds an additional layer of unnecessary and unfair risk on an already overburdened workforce.

### **MOSH Must Make the Standard Specific and Enforceable**

Maryland would not need a heat standard if employers already voluntarily and consistently demonstrated a willingness and ability to provide appropriate water, rest, shade, training, and acclimatization to their employees. And yet, the proposal leaves those critical protections up to the discretion of employers.

For instance, employers get to decide how, when, and where they provide water to employees, with no requirement to provide it for free. As written, the proposal also directs employers to provide “shade or other means of equivalent cooling,” but does not include an adequate definition for shade or restrict employers from locating shade in a hot space, such as in a semi-enclosed shed or next to a tractor with its engine running.

Most egregiously, the proposed standard does not require employers to *write anything down*. This makes it impossible for employees to understand and reference their own employer’s heat-related illness prevention and management plan. It also makes it impossible for MOSH inspectors to enforce the rule; they will just have to take the word of employers who say they are following their own program requirements.

This dynamic has already occurred in California, even though the California heat standard is much more detailed than MOSH’s proposed version. In a new analysis of nearly 500 fatal or catastrophic heat-related incidents from 2005 to 2019 and more than 16,000 heat citations from January 2005 to May 2021, NRDC found that acclimatization was the least cited provision in the California heat standard. This is partly because the standard did not include acclimatization until 2015. However, the relative lack of acclimatization citations also may be related to vague language in the standard. The California standard neither gives employers a framework for how to effectively prepare their workers for heat, nor requires them to keep records on how and when they acclimatize employees.<sup>20</sup>

### **MOSH Must Consult Workers as it Develops a New Proposed Heat Standard**

One of the most disappointing aspects of the current proposal is that it appears MOSH did not engage with Maryland’s vibrant worker advocacy community during the drafting process—or listen to what that community had to offer. As MOSH develops a new science-based proposal for a strong, enforceable standard, it must meaningfully consult with workers who will be affected by the standard, along with industrial hygienists, researchers, and others with occupational heat expertise.

Thank you for the opportunity to comment on this critical rulemaking. We look forward to MOSH developing a new, commonsense proposal that:

- Is based on the best available evidence;
- Creates regulatory certainty for employers and employees;

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<sup>20</sup> Teniope Adewumi-Gunn and Juanita Constible, *Feeling the Heat: How California’s Workplace Heat Standards Can Inform Stronger Protections Nationwide*, NRDC, 2022, <https://www.nrdc.org/resources/feeling-heat-how-californias-workplace-heat-standards-can-inform-stronger-protections>.

- Enables workers to understand and stand up for their rights; and
- Makes it possible for MOSH inspectors to hold unsafe employers accountable.

Only then will Maryland have an effective tool to protect workers from preventable heat-related illnesses, injuries, and deaths.

Respectfully,

Juanita Constible  
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NATURAL RESOURCES DEFENSE COUNCIL