

Testimony of Bruce Lippy, Ph.D., CIH, CSP, FAIHA in support of SB 434

SB 434 - Labor and Employment - Occupational Safety and Health - Heat Stress Standards – Support Testimony – Ann Rosenthal

Dear Chair Kelley, Vice Chair Feldman, and members of the Finance Committee:

My Name is Bruce Lippy. I am a life-long, proud Marylander and a resident of Baltimore County for 36 years. I have a Ph.D. in policy with a focus on regulatory economics from the University of Maryland at Baltimore County. I am a Certified Industrial Hygienist and a Certified Safety Professional and have worked primarily as an industrial hygienist since starting with the State of Maryland's Division of Labor and Industry in 1978 in the training section of Maryland Occupational Safety and Health (MOSH). I subsequently worked as the Senior Vice President of Aerosol Monitoring & Analysis, a Maryland-based consulting firm where I conducted measurements of outdoor carbon dioxide concentrations. I also worked as the Director of the National Clearinghouse for Worker Safety and Health Training, operated on behalf of the National Institute of Environmental Health Sciences. I also served as Training Manager for the Environmental Health Education Center of the University of Maryland Medical Center. While serving as Manager of Special Projects for the International Union of Operating Engineers' National Hazmat Program, I directed research into technologies to protect workers from heat strain while wearing protective garments during the cleanup of the DOE nuclear weapons complex. For the past seven years I have served as the Director of Safety Research for CPWR - The Center for Construction Research and Training, a nonprofit organization focused on construction safety and health. I have also operated my own consulting firm, The Lippy Group, LLC since 2006.

Shortly after I began working at MOSH, the state experienced three deaths in one summer that were all related to excess heat exposure. Two were in a steel mill working with direct exposure to molten metal, the other was in construction. At the direction of the Commissioner of Labor, I helped craft a statewide awareness campaign that included developing a television public service announcement, flyers, posters, and a training program that I personally delivered to many state workers at department of transportation shops across the state. MOSH cited the steel mill under the general duty clause of the OSHAct, but the case was legally protracted and the regulatory mechanism proved insufficiently rigorous. This has been the experience in other states that do not have separate heat stress regulations.

I was proud of MOSH's leading role among the states with their own state programs: we developed regulations to prevent temporary workers from doing dangerous confined space work and we put in place a regulation to protect construction workers from lead exposure many years before OSHA promulgated its lead-in-construction standard. California, Washington State and Minnesota, three other states with innovative state plans, have standards to protect workers from heat stress on the job. I hope Maryland will join them. Federal OSHA only recently passed a health standard controlling silica exposure in construction

although I have colleagues at CPWR who have been working towards that goal since 1998. We simply cannot wait for federal OSHA to promulgate a heat stress standard.

Heat is a clearly a risk to a broad range of workers in both inside and outside environments. Construction workers toiling in direct sunlight laying hot asphalt are obviously at risk, but laundry workers who experience excess humidity along with heat are also at risk.

The risks to workers are only going to increase as global warming continues. National Weather Service statistical data show that heat causes more fatalities per year than floods, lightning, tornadoes, and hurricanes combined<sup>1</sup> The risks aren't just for heat stroke and heat exhaustion. A study for NASA found that as temperatures rise, work quality suffers: when in-plant temperatures rose over 85°F, output dropped by 18% and accuracy suffered a 40% increase in errors.<sup>2</sup>

The past few years have seen some of the warmest summers on record and the expectation is that this trend will continue. When I began measuring carbon dioxide levels, the main agent for global warming, around 1985, the level was roughly 340 parts per million (ppm). The global average in 2018 was 407.4 ppm, which is higher than at any point in at least the past 800,000 years.<sup>3</sup>

The proposed standard is based on common sense approaches that are working for other state programs. These include:

- Providing sufficient cool drinking water throughout the day
- Allowing workers to take regular rest breaks, particularly if they are feeling the symptoms related to heat exposure
- Providing a cool shady area for workers to rest (often a pop-up tent with fans or coolers)
- Training both workers and supervisors on the hazards of heat and what to watch for
- Emergency plans to make sure workers suffering from heat stress are treated promptly and properly
- Reducing the risk of heat exposure by, for example, scheduling work during the coolest part of the day

---

<sup>1</sup> National Oceanic and Atmospheric Administration (NOAA) (2011) National Weather Service. *Heat: a Major Killer*. Available at: <http://www.crh.noaa.gov/lmk/?n=noaaexcessiveheat>  
Accessed: 17 March 2014

<sup>2</sup> National Aeronautics and Space Administration (NASA) (1968, Nov 1). *Compendium of Human Responses to the Aerospace Environment*, NASA-CR-1205.

<sup>3</sup> National Oceanic and Atmospheric Administration (NOAA) (2019, Sept 19). *Climate Change: Atmospheric Carbon Dioxide*. Available at: <https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>

- Allowing workers to acclimatize to heat exposures (most heat-related deaths occur in the first days on the job before the body can adjust to the heat.)

These requirements aren't onerous and represent mostly common sense steps that good employers already have in place. But while at MOSH, I saw enough "low road" employers that I feel mandating protections are critical. Maryland should join the other states which already mandate protection from heat stress on the job. This bill would require MOSH to promulgate a standard within 2 years and again make Maryland an innovator in worker protection. Consequently, I urge you to approve this bill. I'm happy to answer any questions.