1 September 2011

Honorable David Michaels, PhD, MPH
Assistant Secretary for Occupational Safety and Health
U.S. Department of Labor
Occupational Safety and Health Administration
200 Constitution Avenue, N.W.
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Dear Secretary Michaels:

This letter is to confirm my enthusiastic support for Public Citizen's petition, on which I am a co-signer, calling for a standard that finally addresses occupational heat stress and strain. My experience from almost forty years of research in this area makes it clear to me that such a standard is, and has long been, feasible and necessary to protect workers across the country.

My interest in heat stress began with my doctoral studies at the University of Pittsburgh Graduate School of Public Health in the early 1970s. At that time there were two internationally noted researchers (Drs. Harwood Belding and David Minard), who provided a window for me to observe the early activities of the National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH®) as they evolved their professional practice recommendations. After OSHA refused to implement a heat standard in response to NIOSH's 1972 proposals, I was a workshop participant to prepare revisions to the original criteria document, and a reviewer of the revised 1986 NIOSH criteria document that once again called for a federal heat stress standard. I was subsequently a member of the ACGIH Physical Agents Committee that made significant updates to its TLV® (Threshold Limit Value) for heat stress and strain over the past 10 years, and continue to be a member of the Committee.

While working for Westinghouse Electric Corporation in the 1980s, I developed a heat stress management program for the electric power industry under a contract with the Electric Power Research Institute. This established in my mind a model for occupational heat stress management and many of the program elements found their way in to the heat stress practices of employers outside of the electric power industry. I have continued my activities in describing acceptable management practices through book chapters, professional development classes, and consulting. **It is clear that basic heat stress management can be implemented universally.**

The ACGIH TLV represents an improvement over the 1986 NIOSH criteria document, and is an excellent starting point for any heat stress threshold for the following reasons. First is the inclusion of criteria for working above the TLV while maintaining adequate protection, thus allowing for flexibility in implementing the threshold. Second, the effect of clothing on the exposure assessment process has been addressed by the ACGIH

TLV. The simple and effective solution is to consider a fixed burden for different protective clothing ensembles in terms of an adjustment to the measured WBGT to obtain an effective WBGT. The current database on clothing adjustments covers many ensembles used today and the database is growing. Our petition accounts for, and includes detailed information on, both of these factors in its requests for a standard.

Also important are the actual WBGT assessment thresholds. While my initial impression was that they might be a couple of degrees too low, I have come to believe that they are about right. This is reinforced by one study we conducted with illness and injury data at an aluminum smelter and some unpublished data from our laboratory studies. In addition, we are in the process of looking at illness and injury data from other workplaces to further inform our assessments.

WBGT assessment methods are not unduly complicated. The military uses WBGT-based exposure limits in training exercises, ground operations, and shipboard operations to avoid extreme heat conditions. The experience of Minnesota with its indoor heat threshold is another example of the feasibility of such a provision. Other employers use them routinely.

There are many workplaces that will likely fall above a WBGT heat stress threshold limit and thus those employers may claim that the limit is overprotective. However, while it is true that many workplaces are above the TLV, that is precisely the point of the petition. The TLV was established based on numerous studies that clearly show that prolonged exposure to heat loads above these limits poses a serious hazard to workers.

Therefore, I believe it is critical that the ACGIH TLV serve as the basis for any safe heat stress threshold. Other components of our petition requests, such as the requirements to provide sufficient amounts of drinking water and intensive training for workers on the dangers of heat stress, among other requests, are crucial and must also be included in the federal heat standard.

In summary, the time is long overdue for a heat stress standard that will protect workers from dangerous heat exposure. The key elements of program management for such a standard are in place, there is a valid exposure assessment scheme, and my experience is that controls are technically and economically feasible. I urge you to immediately act to implement our petition's requests.

Sincerely,

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