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Dwight Takamine

Director of Department of Labor & Industrial Relations

830 Punchbowl Street, Suite 321

Honolulu, HI 96813

SUBJECT: Petition to revise Hawaii's OSHA standards for occupational lead exposure

Dear Director Takamine:

On behalf of the Western Occupational and Environmental Medical Association (WOEMA), I am writing to alert you to an important occupational health problem in the state of Hawaii, and to formally petition that the HIOSH / Hawaii Occupational Safety and Health Division initiate a process to amend and strengthen the state OSHA standards for lead exposure, both in General Industry and in Construction, in the state.

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WOEMA recognizes that the Arizona occupational lead standards are essentially identical to the Federal OSHA Standards for lead exposure.¹ These standards were initially promulgated more than 35 years ago, and at the time proved remarkably effective at reducing lead exposures among American workers.

However, more recent evidence has shown that these lead standards do not adequately protect workers.² In particular the current lead standards allow workers' blood lead levels (BLL's) to be maintained legally in the range of 40 to 50 mcg/dL. We now know that these levels are not safe either for the workers or their families who may be exposed to lead through "take-home" exposure, because important adverse health effects can occur at BLL's below 20 mcg/dL, and probably even at lower levels.

In America, roughly ten percent of workers with occupational lead exposure have blood lead levels over 10 mcg/dl, and 2% have blood lead levels over 20 mcg/dl.^{6,7} Accordingly, hundreds and perhaps thousands of workers in Arizona may continue to be exposed to unsafe levels of lead in their workplaces. Such current exposures are needless and unfortunate, because there is reasonably strong evidence indicating that workers' blood levels can feasibly be maintained at much lower levels, through a tiered combination of health and safety techniques, including worker education, attention to various routes of exposure, industrial hygiene controls, and medical monitoring.

A modeling study carried commissioned by the California Office of Environmental Health Hazard Assessment in 2013 concluded that occupational exposure to air lead levels above 2 mcg/cu meter as an 8-hour time-weighted average (TWA) would produce a range of blood lead levels in exposed workers, with a 95th percentile of 10 mcg/dl; similarly, an 8-hour TWA exposure to 10 mcg/cu meter would produce a median blood lead level of 14 mcg/dl.⁸ Based on that information and other data, the state of California has moved forward to strengthen its state OSHA standards for lead exposure.⁹

We believe that now is the time to improve the Arizona occupational lead standards, taking account of the following points:

- The current OSHA Lead Standards are based on outdated toxicity information. As noted above, there is now strong evidence to support Medical Removal Protection, or other health and safety interventions, at blood lead levels well below those countenanced in the current standards.
- 2) The current PEL and Action Levels, which are based on Air Lead Measurements, are often not effective in signaling the potential for significant workplace exposure. The PEL's, and other triggers for action within the lead standards, must be improved, in order to foster regular and effective monitoring of blood lead levels in exposed workers.
- 3) Beyond control of inhalation exposures, we support much tighter control of other exposure routes. including hand-to-mouth exposures. Such improved controls would also decrease the risk of take-home lead exposure, which can jeopardize children living in the household of the lead worker.

- 4) An improved set of Action Level triggers and tiered control measures would allow more efficient and cost effective surveillance, providing strong incentives for more stringent control of elevated blood lead levels.
- 5) Some aspects of these revised Standards might perhaps have to be phased in over time, to address feasibility concerns, particularly for workers whose body burdens of lead are already relatively high.

Sincerely,

¹ Code of Federal Regulations 29 CFR 1910.1025, and 29 CFR 1926.62.

² Environmental Health Perspectives, Volume115 (3), March 2007; (http://www.ehponline.org/members/2006/9784/9784.pdf).

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⁸ California Environmental Protection Agency (October, 2013). Estimating Workplace Air and Worker Blood Lead Concentration using an Updated Physiologically-based Pharmacokinetic (PBPK) Model. See Table S-1, page 3.

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Bill Warren, Director

Arizona Department of Occupational Safety and Health

800 W. Washington Street

Phoenix AZ 85007

SUBJECT: Petition to revise Arizona's OSHA standards for occupational lead exposure

Dear Director Warren:

On behalf of the Western Occupational and Environmental Medical Association (WOEMA), I am writing to alert you to an important occupational health problem in the state of Arizona, and to formally petition that the Arizona Department of Occupational Safety and Health (ADOSH) initiate a process to amend and strengthen the state OSHA standards for lead exposure, both in General Industry and in Construction, in the state.

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WOEMA recognizes that the Arizona occupational lead standards are essentially identical to the Federal OSHA Standards for lead exposure.¹ These standards were initially promulgated more than 35 years ago, and at the time proved remarkably effective at reducing lead exposures among American workers.

However, more recent evidence has shown that these lead standards do not adequately protect workers.² In particular the current lead standards allow workers' blood lead levels (BLL's) to be maintained legally in the range of 40 to 50 mcg/dL. We now know that these levels are not safe either for the workers or their families who may be exposed to lead through "take-home" exposure, because important adverse health effects can occur at BLL's below 20 mcg/dL, and probably even at lower levels.

In America, roughly ten percent of workers with occupational lead exposure have blood lead levels over 10 mcg/dl, and 2% have blood lead levels over 20 mcg/dl.^{6,7} Accordingly, hundreds and perhaps thousands of workers in Arizona may continue to be exposed to unsafe levels of lead in their workplaces. Such current exposures are needless and unfortunate, because there is reasonably strong evidence indicating that workers' blood levels can feasibly be maintained at much lower levels, through a tiered combination of health and safety techniques, including worker education, attention to various routes of exposure, industrial hygiene controls, and medical monitoring.

A modeling study carried commissioned by the California Office of Environmental Health Hazard Assessment in 2013 concluded that occupational exposure to air lead levels above 2 mcg/cu meter as an 8-hour time-weighted average (TWA) would produce a range of blood lead levels in exposed workers, with a 95th percentile of 10 mcg/dl; similarly, an 8-hour TWA exposure to 10 mcg/cu meter would produce a median blood lead level of 14 mcg/dl.⁸ Based on that information and other data, the state of California has moved forward to strengthen its state OSHA standards for lead exposure.⁹

We believe that now is the time to improve the Arizona occupational lead standards, taking account of the following points:

- The current OSHA Lead Standards are based on outdated toxicity information. As noted above, there is now strong evidence to support Medical Removal Protection, or other health and safety interventions, at blood lead levels well below those countenanced in the current standards.
- 2) The current PEL and Action Levels, which are based on Air Lead Measurements, are often not effective in signaling the potential for significant workplace exposure. The PEL's, and other triggers for action within the lead standards, must be improved, in order to foster regular and effective monitoring of blood lead levels in exposed workers.
- 3) Beyond control of inhalation exposures, we support much tighter control of other exposure routes. including hand-to-mouth exposures. Such improved controls would also decrease the risk of take-home lead exposure, which can jeopardize children living in the household of the lead worker.

- 4) An improved set of Action Level triggers and tiered control measures would allow more efficient and cost effective surveillance, providing strong incentives for more stringent control of elevated blood lead levels.
- 5) Some aspects of these revised Standards might perhaps have to be phased in over time, to address feasibility concerns, particularly for workers whose body burdens of lead are already relatively high.

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Jess Lankford

Chief Administrative Officer

Nevada Occupational Safety and Health Administration

1301 North Green Valley Parkway, Suite 200

Henderson, NV 89074

SUBJECT: Petition to revise Nevada's OSHA standards for occupational lead exposure

Dear Mr. Lankford:

On behalf of the Western Occupational and Environmental Medical Association (WOEMA), I am writing to alert you to an important occupational health problem in the state of Nevada, and to formally petition that the Nevada Occupational Safety and Health Administration / Nevada OSHA initiate a process to amend and strengthen the state OSHA standards for lead exposure, both in General Industry and in Construction, in the state.

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WOEMA recognizes that the Arizona occupational lead standards are essentially identical to the Federal OSHA Standards for lead exposure.¹ These standards were initially promulgated more than 35 years ago, and at the time proved remarkably effective at reducing lead exposures among American workers.

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Chris Hill, Division Director Utah Occupational Safety & Health Administration 160 East 300 South Salt Lake City, UT 84114-6600

SUBJECT: Petition to revise Utah's OSHA standards for occupational lead exposure

Dear Director Hill:

On behalf of the Western Occupational and Environmental Medical Association (WOEMA), I am writing to alert you to an important occupational health problem in the state of Utah, and to formally petition that the Utah Occupational Safety & Health Administration / Utah OSHA initiate a process to amend and strengthen the state OSHA standards for lead exposure, both in General Industry and in Construction, in the state.

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