

Manganese Advisory Committee

Meeting Minutes

September 29, 2017

Location: Oregon OSHA Portland Field Office

Meeting Started: 10:00 AM

Present:

Bud Affolter (Streimer)	Kathleen Kincade (Oregon OSHA)
Travis Argue (Plumbers and Pipefitters Local 290)	Levi Knapp (Charter Mechanical)
Wayne Boyle (Oregon OSHA)	Brian Krie (Focuspoint)
Joe Bray (Harder Mechanical)	Sue MacMillan (Oregon DEQ)
Heather Case (Oregon OSHA)	Larisa Palmentere (Bullseye Glass)
Tasha Chapman (DCBS)	Russ Reasoner (Oregon OSHA)
Jennifer Dressler (Oregon Farm Bureau)	Bob Russell (OR Trucking Association)
Steve Eversmeyer (NW Natural)	Dru Silva (Cascade Steel)
Gina Facca (Vigor Industrial)	Alden Strealay (AGC)
Tim Frew (OSBCTC)	Matt Svaglic (Gunderson)
Ben Heurung (Boilermakers Local 104)	Trena VanDeHey (Oregon OSHA)
Jeff Jackson (Oregon OSHA)	Eric Wareham (WEDA)
David Johnson (SAIF)	Michael Wood (Oregon OSHA)
Stefan Johnson (Streimer)	Chuck Worley (L&M Industrial)
Matt Kaiser (Oregon OSHA)	

By Phone:

Susanna Wegner (Oregon Health Authority)
Aaron Corvin (Oregon OSHA)

Welcome and Introductions

The group introduced themselves.

Kathleen opened by outlining the role of advisory committees, and by providing context for the focus on Manganese within Oregon OSHA's commitment to re-evaluate between four and six permissible exposure limits (PELs) that our rules set for air contaminants in workplaces. Oregon OSHA wants to hear from stakeholders about any potential fiscal impacts that modifying this PEL would have on specific industries.

She reminded the group about the information from the previous two meetings available on [the topic page for this advisory committee](#) on the Oregon OSHA website. She provided an overview of and addressed the action items from the Sept. 15th meeting:

- *ACGIH 2013 Documentation of their TLV for Manganese, elemental and inorganic compounds.* Oregon OSHA has purchased the document but is unable to post it online because of copyright restrictions. Michael Wood stated that Oregon OSHA would buy additional copies of this document and have them available in our resource center for people who are interested in reading the full documentation. (Also, see "[Review of the current recommended limits](#)" under Discussion, below.)

- Kathleen arranged with SAIF Corporation, and the Department of Consumer and Business Services (DCBS) to review their data about worker health claims associated with manganese exposure, and to present the findings at today's meeting. (See "Reports on claims and compensation" below.)
- Wayne Boyle, Oregon OSHA's laboratory manager, provided a clarification of and additional details about test results from monitoring performed by Oregon OSHA personnel. (See "Lab Data Presentation" below.)
- Additional, potentially affected unions were contacted and some representatives have agreed to participate. Two were in attendance at this meeting.

Discussion:

Review of the current recommended limits:

The group reviewed some pertinent sections of the ACGIH documentation that recommended a significantly lower exposure limit for manganese -- including a table that summarized what were thought to be safe levels of exposure. The group compared this information to a similar synopsis of exposure levels and health effects from the "Berg-Park presentation" from the last meeting and discussed the distinction made in some exposure recommendations between "inhalable" and "respirable" particulate. It was noted that NIOSH has not yet finished their process for setting a new recommended level for manganese.

NOTE on "NOAEL" and "LOAEL": Toxicologists in the group brought up some concerns with the concepts of *no observable adverse effect level* (NOAEL) and the *lowest observed adverse effect level* (LOAEL). Both of these concepts were used in connection with recommended levels of exposure. It was stated that, among the environmental public health scientific community, a LOAEL may be considered more trustworthy than a NOAEL. It was also noted that the documentation we were considering was for occupational exposures rather than general public health benchmarks.

Reports on claims and compensation:

Tasha Chapman, a research analyst with the Department of Consumer and Business Services (DCBS) was asked to analyze workers' compensation claims related to manganese exposure. Tasha noted that there were no specific claims that mentioned manganese, so she broadened the search to claims of exposure to welding particulates and fumes. In the past five years, there have been 18 accepted, disabling workers' compensation claims under these search parameters totaling approximately \$85,000 of loss. (These included claims for various health concerns including respiratory issues.) Tasha stated that there are currently no long term claims related to chronic manganese exposure -- that are easily identifiable. The classification system is based on the initial complaint or cause of loss; the worker's compensation division does not typically re-evaluate or re-classify suspected causes of workplace health effects.

David Johnson, from SAIF Corporation, a worker's compensation insurance provider, stated that they do try to determine "root cause" for occupational illnesses; however, it is complicated to

make the connection between occupational exposure and health effects, especially neurological effects. David noted that SAIF had only one claim since 1942 that specifically mentioned manganese exposure. However, he stressed that the absence of evidence -- in the form of claims -- is not evidence of absence -- of harmful exposures or real, serious health effects, for the same reasons outlined by DCBS. Acute illness -- such as respiratory illness -- is much easier to identify and connect to one's occupation than is chronic disease.

Lab Data Presentation:

Wayne Boyle, Oregon OSHA's Laboratory manager, reviewed a document that showed an analysis of Oregon OSHA monitoring data for manganese. In addition to an evaluation of compliance with the current OSHA PEL, the data was compared to the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV), the California OSHA PEL, and the National Institute of Occupational Safety and Health (NIOSH) recommended exposure level (REL). Over 1,600 samples, taken between 2001 and 2016, were analyzed for manganese. Of about 960 affected employees, approximately:

- 56% would have been exposed at a level higher than the 2013 ACGIH TLV (0.02 mg/m³),
- 14% would have been exposed at a level higher than current California OSHA PEL (0.2 mg/m³), and
- 1% would have been exposed at a level higher than the current NIOSH REL (1.0 mg/m³).

Wayne provided additional information comparing exposure levels by different types of welding processes that seemed to suggest that "MIG", "stick", and "flux core" welding processes resulted in higher levels of exposure to manganese.

The group discussed the limits of the Oregon OSHA lab data, including the following points:

- Industrial hygienists do not necessarily specify the type of environment in the sample description.
- Oregon OSHA does most of its monitoring in open, shop-type environments.
- Monitoring is performed when the compliance officer suspects that and wants to establish that an area is over the PEL.
- Conversely, monitoring in areas not expected to be over the PEL may be used to demonstrate safe levels of exposure in a workplace, such as when a complaint is filed.
- Oregon OSHA does not have jurisdiction over shipyards, therefore data from shipyards are not included in these numbers -- these types of exposures were thought to likely be higher.

There was a short discussion of how Oregon OSHA's (AIHA-certified) lab analyzes their samples. A representative from SAIF also outlined how they analyze their samples.

This data was used as a springboard for the discussion of the different types of exposure limits including the 8-hour Time Weighted Average (TWA-8), the short term exposure limit (STEL), and the Ceiling limit (C). Oregon OSHA's current PEL on manganese exposure is a ceiling limit.

Oregon OSHA can either keep this method of limiting short-term exposures (STEL) or (C), or choose to limit the full working day exposure (TWA-8), or set a tiered approach based, for instance, on the type of industry and likely exposure patterns. The group discussed the health hazards of chronic, long term exposures to manganese as well as the short term (acute), infrequent or periodic exposures.

Review of handouts:

In addition to the handouts from the previous meeting, the group reviewed an updated comparison of the exposure limits set or recommended by different organizations, including Oregon OSHA, Federal OSHA, Washington OSHA, California OSHA, NIOSH and ACGIH.

The hierarchy of controls in consideration of fiscal impact:

Group members seemed to be in agreement that the existing Oregon OSHA and Federal OSHA PEL for manganese needs to be reduced and began the discussion of how to achieve this.

The group also seemed to agree that most industries would need to implement multiple types of controls to achieve a lower PEL: engineering controls, administrative controls, and (likely) an increased focus on personal protective equipment (PPE). It was stated that in some industries, engineering controls would be difficult to implement; and -- depending on the PEL Oregon OSHA establishes -- compliance levels may not be achievable exclusively through engineering controls like local, exhaust ventilation.

Although administrative controls (such as training and increased hygiene in work practices) are important, it was stated that most protection will still be achieved with the use of Personal Protective Equipment. It was also noted that welders and shipyard workers tend to be reluctant to wear PPE for many reasons, including heat stress. Educating workers about the high health risks of exposure may be helpful. Oregon OSHA agreed that training outreach should be a priority.

Concerns were expressed about the feasibility of achieving the most protective exposure limits and the reluctance to set restrictive workplace conditions that could put Oregon employers at a competitive disadvantage with other states.

Some representatives from industries with very occasional and short term exposures (such as those related to equipment maintenance) suggested a task-based rule -- different requirements based on the type of task being done rather than, or in addition to, the length of exposure. Some in the group also discussed whether or not the rules should have a training requirement; responses were mixed.

Roundtable discussion:

After a brief break, Kathleen invited each member of the group to speak about any other information they wished to share, felt was missing or incomplete for the purpose of coming to a decision, and the need and timeline for additional meeting(s) to address fiscal impact. The following concerns/issues/questions were noted by various group members:

- More research will be needed about respiratory protection options to help determine fiscal impact.
- The logistics of increased PPE is of particular concern with construction-related welding where one type of PPE – like fall protection equipment – must work with another type of PPE that the worker will be using at the same time – like respirators.
- Changing behavior of workers is hard work and will take time; perhaps a more “prescriptive” rule would be easier for employers to follow.
- For businesses with locations in multiple states, Oregon OSHA’s rulemaking could have an effect on business both inside and outside our jurisdiction, For this reason, Oregon OSHA should consider aligning our PEL with other states’ PELs. (Some industries stated that if they do business across state lines, they tend to adopt the lowest PEL among the states instead of doing different implementation for each work location.) Some explicitly stated they did not want Oregon’s PEL to be set lower than California’s PEL.
- How would economic feasibility be determined? Concerns that a “one size fits all” rule would be inadequate. Change will likely result in increased costs for their industry.
- We should consider different standards for different types of occupations/ industries. But, there are complications when setting task-specific controls within the rule. Short-term vs. full-day exposure limits might be enough to differentiate these industries. Because feasibility is important, they will likely need another meeting.
- Specific exposure data helps to quantify the impact of reducing exposure limits.
- A group member presented data from his organization, among workers who do not weld:
 - At 1.0 mg/m³, about 5% of the workers would be overexposed
 - At 0.2 mg/m³, about 10% of his workers would be overexposed
 - At 0.02 mg/m³, about 67% of his workers would be overexposed.
 - This organization already uses PAPRs, and report that they have issues with getting their welders to wear them. (Also noted that protecting non-welders in a place where welding takes place is another issue at the lowest PEL.)
- More time is needed to study the data before next meeting.
- Worker education would be important in implementing a different PEL; some supported the idea of having an educational component as part of the rule.
- California OSHA’s fiscal impact statement for their manganese rulemaking is posted on Oregon OSHA’s Manganese PEL advisory committee topic page.
- Employers who had higher levels of exposure and/or fewer controls currently in place were likely not in attendance at these meetings.
- More information is needed about the long-term health affects of exposure to manganese and other welding fumes.

Recommendations: The committee recommended at least one additional meeting to discuss the type(s) of limits to be set as well as the potential fiscal impacts of rulemaking.

Action Items:

Kathleen will follow up with Ben Heurung (Boilermakers Local 104) and with Travis Argue (Plumbers and Pipefitters Local 290) about finding information (studies or databases from other states or at the national level) about health effects for union employees related to exposure to welding fume or manganese.

Oregon OSHA will research typical costs of currently available respiratory protection.

Next full committee meeting: Oregon OSHA will take some time to consider the advisory committee's recommendations. A full-committee meeting will be scheduled within the next 2-3 months to consider the fiscal impact of a draft proposal. Kathleen will send out a "Doodle Poll" with proposed dates and times for the next meeting.

Meeting Adjourned: 12:03 PM