



IN WASHINGTON  
c/o Wiley Rein LLP  
1776 K Street NW  
Washington, D.C. 20006  
Tel. 202.719.7000  
Fax 202.719.7207

---

November 28, 2016

Anne Soiza  
Assistant Director  
Division of Occupational Safety and Health  
Washington State Department of Labor & Industries  
P.O. Box 44000  
Olympia, WA 98504-4000

RE: Washington Workplace Lead Regulations

Dear Ms. Soiza:

The Battery Council International (“BCI”) appreciates the opportunity to participate in the Washington Department of Labor and Industries (“L&I”), Division of Occupational Safety and Health’s (“DOSH”) review of occupational lead standards in Washington. Because this inquiry could have dramatic effects on Washington workers and industry, and may set national precedent, it must be thorough, deliberate, and based on the best available scientific, economic, and real-world information as applied to Washington’s workplaces. This letter responds to DOSH’s request during its October 25, 2016, stakeholder meeting for industry stakeholders to provide DOSH with comments and suggestions.

BCI is a non-profit trade association whose members are engaged in the manufacture, distribution, and recycling of lead batteries internationally and across North America. BCI members account for over 98% of U.S. lead battery production and 100% of its recycling (i.e., secondary lead smelting) capacity. Our industry promotes lead-acid battery recycling by collecting and recycling lead batteries, encouraging the enactment of mandatory lead battery recycling laws, and supporting ongoing consumer and industry education efforts. BCI members have employees in Washington employed in battery manufacturing, distribution, and maintenance facilities.

Furthermore, we believe the lead acid battery industry can offer DOSH assistance in evaluating and understanding real-world lead control and worker protection measures that no other industry can match. The lead-acid battery manufacturing industry is the single largest user of lead in the nation, with lead acid battery production accounting for approximately 88% of the lead consumed in the United States each year.<sup>1</sup> And, through BCI members’ considerable efforts, the lead-acid battery industry members are, as a group, the most responsible and safe industrial consumers of lead. For example, in marked contrast the volume of lead consumed according to EPA data, in 2014 the lead acid battery manufacturing and recycling industries

---

<sup>1</sup> U.S. Geological Survey, 2014 Minerals Yearbook, Lead, at 42.1, available at <http://minerals.usgs.gov/minerals/pubs/commodity/lead/myb1-2014-lead.pdf>.

November 28, 2016  
Anne Soiza, Assistant Director  
Division of Occupational Safety and Health

combined accounted for less than 1.5% of nationwide lead-in-air emissions,<sup>2</sup> and BCI statistics show that the nationwide average blood lead levels for lead-acid battery industry workers is below 12 µg/dL.

As discussed below, BCI is very concerned by statements made by certain other stakeholders, in written comments and on the October 25th call, encouraging DOSH to ignore its statutory duties and simply “copy-paste” a discussion draft California regulation into the Washington regulations. The California discussion draft reflects a California agency’s approach to dealing with California workplaces based on California conditions and feasibility considerations. Washington DOSH must develop a Washington-based approach for regulating Washington workplaces.

Those stakeholders would also have DOSH ignore an opportunity to refocus worker protection measures on what have proven to be the most effective worker protection measures over the last 40 years, and would instead have DOSH merely ratchet down numerical targets such as the Permissible Exposure Limit (“PEL”) for lead-in-air. Real-world experience proves that focusing on factors such as worker education, work practice controls, personal protective equipment (“PPE”), and worker hygiene offer far greater potential for improvements to worker health than do changes to the PEL.

DOSH was correct on the October 25th call to confirm its intention to follow a methodical and thoughtful process as it reviews the current regulations. This is not only logical but, as explained below, legally required. BCI encourages DOSH to work with BCI and other stakeholders to understand the challenges facing Washington employers as well as the significant—and successful—voluntary efforts that our industry has made to protect worker health. BCI looks forward to working with DOSH as this process moves forward.

## **I. DOSH MUST MEET ITS STATORILY MANDATED SUBSTANTIVE AND PROCEDURAL REQUIREMENTS**

The Washington Industrial Safety and Health Act of 1973, RCW 49.17 (“WISHA”), requires the agency to perform an independent and complete analysis of the current state of worker health and propose regulations that are supported by the best science, feasible, and sufficient to protect Washington workers (not workers in other states, who may face different conditions in other contexts). It thus would be improper for DOSH to base any action exclusively on the recommendations of another state’s agencies or public health departments. Those entities’ focuses, jurisdictions, and mandates are not the same DOSH’s, and conditions in Washington are different. Equally important, the recommendations provided to DOSH to date do not account for DOSH’s statutory and procedural obligations.

WISHA further requires DOSH to meet specific statutory elements for the development and adoption of occupational safety and health standards. For example, RCW 49.17.050 requires DOSH to affirmatively find, on the basis of evidence and with respect to Washington workers and workplaces, that the standard chosen addresses a

<sup>2</sup> EPA 2014 National Emissions Inventory, data available at: <https://www.epa.gov/air-emissions-inventories>

“material impairment” to employees arising from a known risk in Washington workplaces, that agency’s conclusions be based on the latest available scientific data, that the standard be economically and technologically feasible for Washington industry, and that the standard be reasonable. DOSH must make formal findings with regard to each of these elements. DOSH may not delegate these tasks to other agencies, such as the Seattle and King County Department of Public Health, the agencies of other state governments (such as Cal/OSHA), or academic publications.

Furthermore, Washington courts have instructed that “[i]n interpreting WISHA, Washington courts look to federal decisions interpreting similar provisions of the Occupational Safety & Health Act of 1970.” *Scholten Roof Enterprises, Inc. v. Washington State Dep’t of Labor & Indus.*, 172 Wash. App. 1012 (2012), citing *Wash. Cedar & Supply Co., Inc. v. Dep’t of Labor & Indus.*, 119 Wash. App. 906, 914 (2004). This reliance is well placed: the federal courts have provided occupational safety agencies with a straightforward roadmap of the procedural and legal requirements that must be followed when adopting new workplace safety regulations.

As an initial matter, before adopting new standards, DOSH must show that a workplace is “unsafe” under the current safety and health standards. *Industrial Union Dept., AFL-CIO v. American Petroleum Institute*, 448 U.S. 607, 641-42 (1980). With regard to lead, this may not be as obvious as some assume because BCI data shows that when companies operate in compliance with the current federal and Washington air lead requirements, the majority of battery plant workers nationwide have blood lead levels below the medical removal levels suggested by King County. Furthermore, under a voluntary industry program, BCI members have committed to having 100% of their employees below 30 µg/dL by the end of 2016. This data also shows that these workplaces’ air lead levels are not *per se* “unsafe” because, as described further in Section II, worker protection goals are being met through other methods.

In addition, if DOSH seeks to prevent the “subclinical effects” of a toxic substance, the agency must make concrete findings specifically tying the protective level to a specific health effect. *United Steelworkers of America, AFL-CIO-CLC v. Marshall*, 647 F.2d 1189, 1252 (D.C. Cir. 1981). While academic stakeholders have asserted that these effects are well known, the most definitive survey published to date on these sorts of effects acknowledges that many of the effects of lead are not scientifically proven at very low levels. See National Toxicology Program’s Monograph on Health Effects of Low-level Lead (June 2012).<sup>3</sup>

Finally, as explored in Section III, DOSH must determine that any standard adopted is feasible.

DOSH must meet the statutory requirements described above, as well as comply with the procedures required by the Washington Administrative Procedure Act. RCW 34.05. To date, BCI has been reassured by DOSH’s commitment to adhering to its statutory requirements, and appreciates that commitment.

---

<sup>3</sup> Available at <https://ntp.niehs.nih.gov/pubhealth/hat/noms/lead/index.html>.

## **II. PELS ARE AN OUTDATED APPROACH AND ARE NOT THE BEST APPROACH TO CONTROLLING WORKER BLOOD LEAD LEVELS**

BCI urges DOSH to fully reevaluate the appropriateness of continuing the regulatory regime adopted almost 40 years ago. Most significantly, that scheme focuses on the PEL rather than other worker protection measures. However, those alternative methods have proved effective, acceptable to workers, and cost-effective. Thus, DOSH should consider holistically how best to protect today's workers and not just evaluate revisions of the regulation's existing numerical targets. Put another way, DOSH should more broadly consider how to build upon the dramatic improvements in worker protection achieved by the lead-acid battery industry, among others, since the 1970s.

The current approach used in DOSH's workplace lead standard was developed in the 1970s and incorporates a "hierarchy of controls" that places primary reliance on engineering. The PEL is then used as the principal measure of the adequacy of those engineering controls. But this inappropriately places all other methods of protecting workers in a subordinate position. Indeed, the regulations instruct employers to make all efforts to achieve the PELs before requiring them to take even the first step towards implementing other protections. Simply ratcheting down the PEL fails workers by imposing very high costs on their employers—putting jobs at risk—without providing employees with the modern protective measures shown to be most effective.

This PEL-first approach no longer makes sense and must be reconsidered. A considerable amount of scientific research and improvements in worker safety systems, policies, and practices have accumulated since the 1970s. These systems, policies, and practices, when used in combination with controlled air lead levels, provide a much more sound focus for regulatory revision than does the primary reliance on a PEL.

In this context, it merits note that the analysis supporting the U.S. Occupational Safety and Health Administration's (OSHA) 1970s lead standard focused principally on smelters, mines and battery plants. OSHA estimated that there were more than 200 battery manufacturing facilities nationwide, many of which were not meeting the then-effective PEL of 100 µg/m<sup>3</sup>. Furthermore, OSHA determined that the respiratory personal protective equipment (PPE) available in that era was ineffective at protecting workers, due in part to discomfort and the resulting non-compliance. In that situation, it is not surprising that federal and state regulators chose to use easily-measured air-lead limits as the primary, and most easily enforceable, method of addressing worker exposure.

However, different considerations apply today. First, the affected industry itself has changed. In Washington, the industry does not include any smelters, and only one battery manufacturer is currently operating. Even nationwide the picture has changed: there are now approximately 50 battery manufacturing facilities, all of which are well maintained and technologically advanced. U.S. battery manufacturing facilities consistently outperform the requirements of current federal and state regimes. All also have well-established, rigorous worker exposure prevention programs and a demonstrated record of success. For example, since 1996, BCI members have committed to a voluntary medical removal program that mirrors DOSH's and OSHA's medical removal regimes, but at blood lead levels far more stringent than the regulations. The current

iteration of that program commits BCI members to maintaining the blood lead levels of all workers below 30 µg/dL by the end of 2016.

BCI members also have worked with OSHA to develop comprehensive “etool” occupational safety and health training programs for battery manufacturers and lead smelters. And, as described in more detail below, BCI members provide workers with extensive training in proper work practices, PPE, and good hygiene. This empowers workers to meaningfully contribute to preventing their own exposures.

The result of industry’s voluntary efforts has been profound: today, the average blood lead level of battery industry employees in lead-exposed positions is below 12 µg/dL. BCI believes these advances are transferable to other industries, but defers to those industries to speak for themselves.

Second, modern respiratory PPE is vastly superior to the PPE evaluated when the federal standard was adopted in the 1970s. Modern respirators provide workers an individualized fit and are more efficient than those available decades ago. When properly worn and cared for, PPE can protect workers against significant levels of lead exposure, even at air lead levels far above those present in any currently existing facility.

Furthermore, workers today better understand the need to protect their own health and, BCI members’ experience is that because employees are better educated on the risks of exposure, and since the equipment is available and sufficiently comfortable, they are ready and willing to wear respirators as instructed.<sup>4</sup> Indeed, employers in the lead-acid battery industry today have made compliance with respiratory protection and hygiene instructions a job requirement, and experience shows that if workers are provided appropriate education and incentives, worker compliance with respiratory protection and hygiene practices is excellent.

Third, employers’ worker protection policies and programs have dramatically improved since the 1970s. BCI members have worked for many years to develop better worker hygiene practices and equipment well beyond those required by existing regulations. We believe this is also true for other industries. Today, BCI members have full-time professional worker health staffs, that require workers to shower after their shifts, provide their workers with specialized soaps and shampoos that are specially designed to aid the removal of lead, provide company laundry services for work clothes, and provide considerable additional employee support. Workers also are trained and educated on the problems posed by smoking, hand-to-mouth contamination, take-home lead, and other hygiene issues. Furthermore, when blood lead testing reveals that individual workers may have hygiene issues, those employees receive one-on-one instruction and counseling to ensure they are using the best techniques.

As indicated above, these combined efforts have been profoundly successful. By the end of 2015, not one of the more than 18,500 lead-exposed battery manufacturing and secondary smelter employees in the nation had a blood lead level above 40 µg/dL, and less than 1% of employees were above 30 µg/dL. The national weighted average blood lead level of the industry’s employees was and is below 12 µg/dL.

DOSH should build upon the lead acid battery industry’s experience and focus its attention not on PELs, but rather the methods that have been proven to be most successful in reducing worker blood lead levels.

---

<sup>4</sup> BCI members also make respirators readily available even to those employees whose air exposures would not otherwise require respirators, but who wish to take extra precautions. Many employees choose to take these extra precautions on their own initiative.

### **III. AN AFFIRMATIVE FINDING OF FEASIBILITY REQUIRES EVALUATION OF BOTH TECHNOLOGICAL AND ECONOMIC FEASIBILITY**

WISHA mandates that DOSH adopt only standards which are “feasible.” RCW 49.17.050(4). This requires the agency to perform an independent feasibility analysis and make an affirmative finding that any proposed standard is technologically and economically feasible for Washington employers.<sup>5</sup> We expand on what that means in the following paragraphs.

#### **A. The Standard Must be “Technologically Feasible” for Regulated Industry to Achieve**

With regard to technological feasibility, DOSH must assess the available technological methods to achieve new standards, and must make a finding that these methods are available to industry. DOSH must assess the available technological methods to achieve any new standard—including methods for measuring compliance—and must make a finding that these methods are available for use at both existing and new facilities. Theoretical technologies or methods are not a sufficient basis on which to make a feasibility finding.

Significantly, even if air control technology is available for new construction, many existing manufacturing facilities may not be physically able to be retrofitted to achieve a PEL of 10 µg/m<sup>3</sup> because dramatic reductions in air-lead levels may require the installation of very large amounts of air handling equipment, modification of workstations, or new manufacturing equipment with integrated dust removal systems. A related concern is that the physical structures of older buildings simply may not be able to accommodate the very large additional equipment required: the rooftops and walls were not engineered to bear the additional loads imposed by these new systems. Other facilities simply may not have the room to install new ductwork, dust collecting bag-houses, and the relevant mechanical systems.

DOSH must analyze the technological hurdles and determine that industry can in fact achieve any proposed Action Level and/or PEL.

#### **B. The Standard Must be “Economically Feasible” for Regulated Industry to Achieve**

Even if additional control methods are technologically feasible, DOSH must assess the economic impact to Washington businesses and workers, and make a finding that the standard will not have an unacceptable adverse economic impact. BCI’s experience around the nation already reveals, however, that the standards urged by some stakeholders have the potential to promptly put Washington employers out of business.

When Washington and other states adopted their versions of the existing federal standard, they could rely on a feasibility analysis performed by OSHA. But OSHA has

---

<sup>5</sup> *American Textile Mfrs. Inst., Inc. v. Donovan*, 452 U.S. 490 (1981), see also *United Steelworkers v. Marshall*, 647 F.2d 1189 (D.C. Cir. 1980).

not updated that feasibility analysis in over 40 years to reflect today's industry structure or for the proposed levels. Today DOSH must perform its own economic feasibility analysis for Washington businesses.

This is not a simple calculation. For example, the complexity of this challenge is exacerbated by the characteristics of lead particle sizes. For example, in battery manufacturing manufacturing facilities, particles tend to be relatively large, which makes stringent engineering control technologies especially expensive. An independent analysis of the particle size distributions in a cross-section of nine lead-acid battery manufacturing and five secondary smelting facilities in the nation commissions by BCI in 2014 provides a reliable and well-supported insight into the actual sizes of the lead particles in the air of modern day U.S. facilities.<sup>6</sup> The study found that the particle sizes in the studies facilities were predominantly relatively large particle sizes, with average mass median aerodynamic diameters (MMADs) ranging from approximately 21 to 32  $\mu\text{m}$  at battery manufacturing facilities, and from 15 to 25  $\mu\text{m}$  at secondary smelting facilities. This means that the equipment needed to achieve very low PELs is more complex and more costly than would be required for smaller particle sizes.

In California, there are a small number of battery manufacturers, but sufficient to allow industry to conduct a state-based analysis of the economic situation in that state. The California battery manufacturers thus developed engineering analyses of the costs that would be required to meet a PEL of 10  $\mu\text{g}/\text{m}^3$  in just the six areas of a typical battery manufacturing plant posing the greatest air-lead challenges. Using the methodology described by federal OSHA for determining economic feasibility, these companies determined that the necessary controls would be economically infeasible, and have an estimated cost exceeding 10% of annual industry profits.<sup>7</sup> This exceeds the level OSHA has determined to be "feasible." Costs to ensure compliance of an entire facility would be even greater.

Because the battery manufacturer population in Washington is even smaller, DOSH will need to carefully evaluate the impacts on Washington employees if the costs impose exceed the capacity of Washington employers to absorb. BCI understands that the costs for controlling air leads will be roughly similar in similarly situated facilities, but Washington DOSH will need to evaluate whether the costs and capacities in Washington differ from those found in California.

### **C. If DOSH Reduces the PEL, Separate Engineering Control Air Limits Could Address Some Feasibility Concerns**

As noted above, BCI believes PELs are an outdated method of regulation and not the best means of protecting workers. However, if DOSH decides to adjust its PEL, one regulatory approach that merits consideration for addressing economic feasibility concerns is the "separate engineering control air limits" ("SECALs") approach.

---

<sup>6</sup> White Paper: Particle Size Distributions of Lead Measured in Battery Manufacturing and Secondary Smelter Facilities and Applications in Setting Workplace Lead Exposure Limits Prepared for Battery Council International (June 10, 2014).

<sup>7</sup> See OSHA Silica PEL, Preliminary Economic Analysis and Initial Regulatory Flexibility Analysis (Silica PEL PEA) at page VI-5 (2013), Docket No. OSHA-2010-0034-1720 ("[I]n the absence of evidence to the contrary, OSHA generally considers a standard to be economically feasible for an industry . . . when the annualized costs of compliance are less than a threshold level of ten percent annual profits.").

This approach was notably utilized by OSHA in the cadmium standard and is incorporated in California's most recent draft of revisions to its lead standard.<sup>8</sup> When the SECAL framework establishes a single PEL, but also includes a number of SECALs specific work areas in specific industry sectors. In these areas a higher particulate level is allowed, so long as specified additional worker protection measures are implemented.

OSHA explained the SECAL framework when the cadmium standard was "Employers in a particular industry covered by the SECAL will be obligated to achieve SECAL by engineering and work practice controls to the extent feasible and to protect employees from exposures above the PEL by any mix of compliance methods, including work practice controls and respirators."<sup>9</sup> That is, OSHA recognized the economic and infeasibility of facility-wide reliance upon engineering controls to meet the PEL, and provided for alternate frameworks.

The industry sectors granted SECALs in the cadmium standard were approved by OSHA based on "evidence on current exposures and [because] the effectiveness of additional controls indicated that the [cadmium] PEL of 5 µg/m<sup>3</sup> is not feasible with engineering controls . . ."<sup>10</sup> The SECALs were set at the levels OSHA determined were "the lowest feasible level that could be achieved by engineering and work practice controls" in those areas.<sup>11</sup> OSHA determined that a "two-tier [SECAL] structure . . . is simultaneously more protective of workers' health and feasible."<sup>12</sup>

With respect to battery manufacturing facilities, as part of the current Cal/OSHA process, BCI members identified the following areas as critical for receiving SECALs: oxide production; paste mixing; grid pasting and parting; battery assembly; grid production and small parts casting; and plate formation. After a thorough evaluation, Cal/OSHA included SECALs for these work areas in its most recent discussion draft regulation. DOSH should do so as well.

Our manufacturer and secondary smelter members have a long and proven record of using a combination of comprehensive worker health protection practices in these areas (engineering control and work practices plus PPE, hygiene, and education) to achieve worker blood lead levels far below those currently required by OSHA or DOSH. That track record of success provides a substantial basis to give DOSH confidence that workers in the lead-acid battery and secondary smelter sectors would continue to be more than adequately protected by a SECAL approach by requiring that those successful additional techniques be implemented.<sup>13</sup>

---

<sup>8</sup> Available at <http://www.dir.ca.gov/dosh/doshreg/5198-meetings/discussion-draft-of-5198-for-11-10-2015.pdf>.

<sup>9</sup> Preamble to Final Cadmium Standard, 57 Fed. Reg. 42,102, 42,336 (Sept. 14, 1992).

<sup>10</sup> *Id.* at 42,212.

<sup>11</sup> *Id.* at 42,336.

<sup>12</sup> *Id.* at 42,343.

<sup>13</sup> As explained in BCI's prior comments, engineering control potentially feasible for smaller facilities may be technically and economically infeasible for the existing large-scale facilities typical of lead-acid battery manufacturers and secondary lead smelters.



#### **IV. DOSH CAN NOT LAWFULLY “COPY-PASTE” THE DISCUSSION DRAFT CALIFORNIA REGULATIONS**

BCI is very concerned with the suggestion from other stakeholders that DOSH adopt, without question, the elements of a discussion draft regulation under development in California. While BCI acknowledges the significant effort that various agencies in California have put into that discussion draft, it is a California-drafted approach to implement what California agencies see as a solution for California workplaces—and it has yet to be formally proposed. Washington DOSH must independently evaluate what is right for Washington workers and employers.

Furthermore, the modeling effort underlying the Cal/OSHA proposal, Cal-OEHHA’s so-called “Legget Plus” pharmacokinetic model, remains flawed and has not been subjected to the academic rigor or publication processes that would be expected for a study a study on which Washington DOSH relied.<sup>14</sup> During various rulemaking hearings in California, industry commenters and independent experts have brought specific questions and issues to the attention of the authors. However, to our knowledge, OEHHA have not responded to those questions or updated the publication or modeling to address the identified flaws.

For example, OEHHA relied on outdated and inapposite particle size data and unnecessarily limited the modeled particle sizes to those under 15  $\mu\text{m}$ . But BCI data provided to OEHHA shows that the particles in domestic lead-acid battery manufacturing facilities have an average MMAD ranging from approximately 21 to 32  $\mu\text{m}$ , and in secondary smelters ranging from 15 to 25  $\mu\text{m}$ . This error is meaningful because larger particle sizes present less risk of blood lead uptake than smaller particle sizes at the same air-lead levels. Larger particles are not absorbed as readily by the body, are not deposited as deeply in the respiratory tract, and are cleared from the respiratory tract more rapidly than the smaller particles assumed by OEHHA. The model thus does not reflect real-world worker exposures.

OEHHA also made other errors. For example, OEHHA failed to apply the appropriate Multiple-Path Particle Dosimetry (MPPD) Model inhalability adjustment factor to accommodate particle sizes larger than 8  $\mu\text{m}$ . This appears to have been simply an oversight, because elsewhere in its modeling OEHHA used particles sizes up to 15  $\mu\text{m}$ , but the error changes the results. OEHHA also relied on inadequate inhaled particle clearance models and used an outdated version of the model despite recognizing that an improved ICRP model is now available. In addition, the modeling contained a mass-balancing error.

While the model’s authors have acknowledged the existence of errors in public meetings, and apparently corrected at least one in a different California Proposition 65 rulemaking process (the mass-balancing error), OEHHA has never issued a revised report as part of the Cal-OSHA process. Yet BCI’s analysis indicates that correcting these errors will have a significant impact on the model’s predicted relationship between air-lead levels and blood lead levels.

Until such time as OEHHA corrects the numerous identified errors and deficiencies of their modeling report, and subjects that report to a full peer review, that report cannot be relied upon to form the foundation of any regulatory endeavor.

---

<sup>14</sup> While the Cal-OEHHA investigators invited select academic collaborators and former coauthors to provide a review of an early draft, those collaborators did not provide the independent peer review that would normally be expected before this sort of work was published.

**V. BCI URGES PRACTICAL SOLUTIONS TO SATISFY DOSH'S STATUTORY MANDATES AND BETTER PROTECT WORKER HEALTH**

DOSH now has an opportunity to lead the nation (and the world) by not just changing the numerical targets of a 40 year-old approach, but by embracing a modern approach that is better crafted to protect worker health in today's work environment. There have been dramatic improvements put in place voluntarily by the lead-acid battery and secondary smelting industries, the largest users of lead today, but we are now addressing much reduced exposure level targets and evaluation of much more subtle health effects. Relying solely on stringently-controlled levels of lead-in-air is not the best mechanism for controlling blood leads (if it ever was).

Instead of simply reusing a 40 year-old approach, DOSH should embrace the most effective available protective measures—namely controlling air-lead levels to a reasonable level in conjunction with worker education, individualized work practices, respiratory protection and good hygiene—rather than continuing to unnecessarily rely solely on ever tightening (and extraordinarily expensive) facility-wide engineering controls.

BCI supports the agency's interest in adjusting workplace lead standards to build on the learning of the past several decades. BCI has identified three practical solutions that would help DOSH satisfy its mandate with rational steps to further improve and standardize workplace safety.

- **Recommendation One:** BCI urges modifying the current DOSH lead removal standard so it is consistent with current leading industry practices. These following levels meet DOSH's statutory requirements in that they are at least as effective as the federal standards, will protect workers from any known or likely material impairments, and are based on the latest scientific data. BCI also believes they are likely both feasible and reasonable.
  - Medical Removal after two regularly scheduled blood lead tests or a six-month average of 30 µg/dL for all workers.
    - Medical Removal upon a single blood lead test of 35 µg/dL.
    - A return to work blood lead level of 24 µg/dL.
  - MRP return levels should be based on measured blood lead level reductions that are greater than the recognized testing variability so as to ensure that significant reductions in exposure have resulted from MRP. With current blood lead measurement technology, as employed by qualified laboratories, the testing variability generally is 5 µg/dL.
  - Removal and return determinations should be based on the last two consecutive regularly scheduled blood lead tests or a six-month average.

November 28, 2016  
Anne Soiza, Assistant Director  
Division of Occupational Safety and Health

- **Recommendation Two:** BCI urges that DOSH focus its attention on reducing worker blood lead levels not through the limitation of air lead levels, which is costly and ineffective, but rather through work practices, hygiene, housekeeping, and worker personal protective equipment. Industry experience over the last 40 years has proven that the PEL does not bear a close correlation to work blood lead levels. Rather, the most effective means of reducing worker blood lead levels are those identified above.
  - If DOSH drafts regulations intended to increase the monitoring of potentially at-risk employees, those increased monitoring requirements should be triggered by worker blood-lead measurements or worker failure to adhere to good work practices (e.g., PPE, hygiene, work practices, etc).
  - Triggering increased monitoring on air-lead levels not only focuses on a less-relevant factor to blood lead levels in the real world, but also unnecessarily penalizes workers who happen to work in higher air-lead areas and display exemplary blood lead levels.
- **Recommendation Three:** To the extent DOSH evaluates changes to the PEL, BCI urges DOSH to include Secondary Engineering Control Air Limits (SECALs) similar to those included in the current California discussion draft. The SECAL provisions were critical in California to supporting Cal/OSHA's determination that the potential changes to the PEL were technologically and economically feasible; absent the SECALs, industry could not meet the suggested PEL.

Respectfully submitted,

*Randall Reyer*  
Chair, BCI Industrial Health Committee