

**OCCUPATIONAL SAFETY  
AND HEALTH STANDARDS BOARD**

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Website address [www.dir.ca.gov/oshsb](http://www.dir.ca.gov/oshsb)**General Industry Safety Orders,  
Sections 3420 and 3424, Brush Chippers  
Advisory Committee  
May 30, 2024****Virtual – <https://us06web.zoom.us/j/84190447043>****Start Time: 9:05 a.m.****End Time: 2:55 p.m.****Facilitator(s) Name(s):** Michael Nelmidia (Committee Chair), Amalia Neidhardt (Principal Safety Engineer), Simone Sumeshwar, Kevin Goddard**Analyst Name:** Ki Lucero, Legal Assistant

**Participants:** Ray Banfill, International Brotherhood of Electrical Workers; Eric Berg, Cal/OSHA; Jeff Buchanan, Jeff Buchanan Tree Service; Jason Denning, Cal/OSHA; Jeff Ebersole, Vermeer Corporation; Derek Engard, Federal OSHA; JD Friend, Operating Engineers, Local 3; Peter Gerstenberger, Tree Care Industry Association; David Gift, Vermeer Corporation; Kimberly Hall Barlow, Jeff Buchanan Tree Service; Ryan Hurley, Bandit Industries; Michelle Iorio, Occupational Safety and Health Standards Board (OSHSB); Carolyn Karr, California Conservation Corps; Caitlin Klingenberg, Vermeer Corporation; Trevor Koolmees, Vermeer Corporation; Jeremy Lewis, The Davey Tree Expert Company; Ernesto Macias, West Coast Arborist, Inc.;<sup>1</sup> Dan Oberlies, Utility Services Corporation (Asplundh Tree Experts); Bill Owen, Monarch Landscape Companies; Scott Prophett, F.A. Bartlett Tree Expert Company; Steven Talsma, Vermeer Corporation; and Matt Valentine, Morbark

**Summary of Rulemaking Topic:** The Advisory Committee is convened to propose rules for the safeguarding of brush chippers. Previously, the committee met to determine the merits of including presence sensing systems as a means to safeguard brush chippers. The committee also determined that presence sensing system had merit for consideration among other existing safety systems. Currently, presence sensing systems lack backing by a consensus standard or other regulatory requirement to ensure presence sensing systems are safe and effective to install on brush chippers. The third meeting of the committee is convened to discuss a board staff proposal to certify and validate presence sensing systems.

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<sup>1</sup> Upon notification to the Committee Chair on June 30, 2024, Ernesto Macias no longer represents West Coast Arborist and is retained on the committee representing Tree Service Kings, Inc.

## **DISCUSSION**

### **2023 Proposal**

The comments for the April 24, 2023, comments were raised for correction and clarification by the Committee Chair. Written comments to the April 24, 2023, draft proposal were received from Carolyn Karr representing California Conservation Corps., Gwyny Pett representing Bottoms Up Gardens and Tree Care, Jeff Buchanan representing Jeff Buchanan Tree Service, Kimberly Hall Barlow representing Jeff Buchanan Tree Service, Ray Banfill representing International Brotherhood of Electrical Workers, Local 1245, Steven Talsma representing Vermeer Corporation and Peter Gerstenberger representing Tree Care Industry Association.

### **Delayed Implementation**

Support: Gwyny Pett

Opposed: No comments received.

### **Guarding Requirement**

Support: Carolyn Karr, Gwyny Pett

Opposed: Peter Gerstenberger, joined by Treavor Koolmees, Ernesto Macias, Jason Morey, Dan Oberlies, Scott Prophett and Timothy Walsh; Steve Talsma separately concurred.

### **Attendant Exception**

Support: Carolyn Karr, Jeff Buchanan

Opposed: Peter Gerstenberger, joined by Treavor Koolmees, Ernesto Macias, Jason Morey, Dan Oberlies, Scott Prophett and Timothy Walsh; Steve Talsma separately concurred.

### **Validation/Approval of Presence Sensing Systems**

Support: Jeff Buchanan, Carolyn Karr

Opposed: Peter Gerstenberger, joined by Treavor Koolmees, Ernesto Macias, Jason Morey, Dan Oberlies, Scott Prophett and Timothy Walsh; Steve Talsma separately concurred.

### **2024 Proposal**

The comments for the Board Staff May 30 Discussion Draft Proposal (circulated April 26, 2024) were raised for correction and clarification by the Committee Chair. For brevity and clarity, the Committee Chair incorporates the written comments into the respective section below.

### **Section 3420, “Certification or Certify”**

The Committee Chair sought comments regarding the definition of “certification or certify.” So specific oral comments were received for the definition of “certification or certify.”

In written comments F.A. Bartlett Tree Expert Company representative David Marren recommended clarifying any difference between the design certification/validation conducted by the manufacturer and the installation and annual certification/validation required by the employer.

No action taken.

### **Section 3420, “Certification/Validation”**

The Committee Chair sought comments regarding the definition of “certification/validation.” Oral and written comments were received.

Vermeer Corporation representative Caitlin Klingenberg raised concerns regarding the combination of the terms.

No action taken.

### **Section 3420, “Validation or Validate”**

The Committee Chair sought comments regarding the definition of “validation or validate.” No oral comments were received.

In written comments David Marren recommended references to section 3424(c), (d) and Appendix A.

No action taken.

### **Section 3424(c)(7)(A), 3424(c)(7)(B) and Exception to 3424(c)(7)**

Caitlin Klingenberg explained that the 36 month timeframe was reasonable when combined with the exception. However, the 36 month timeframe was not viable for manufacturers and employers to augment brush chippers.

Jeff Buchanan supported applying both provisions of section 3424(c)(7)(A) and section 3424(c)(7)(B) concurrently. Jeff Buchanan supported the 36 month timeframe for implementation.

Peter Gerstenberger suggested improving section 3424(c)(7) to include “platooning”—allowing the attendant (exception to section 3424(c)(7)) to exchange roles with another person—and proposed amending “while the feed system is active” at the end of the first sentence to exception to section 3424(c)(7). Peter Gerstenberger suggested **“immediately before and during chipping operation[.]”**

Cal/OSHA representatives Eric Berg and Jason Denning supported applying both provisions of section 3424(c)(7)(A) and section 3424(c)(7)(B) concurrently. Kimberly Hall Barlow prosed limiting the exception to the timeframe necessary to implement the safety devices.

West Coast Arborist representative Ernesto Macias opposed requiring concurrent application of section 3424(c)(7)(A) and section 3424(c)(7)(B). Peter Gerstenberger concurred with these comments.

Written comments previously submitted by David Marren proposed: “[a]fter 36 months after the effective date of this regulation, chipping operations shall have an attendant stationed at a location within immediate reaching distance of the quick stop and/or control bar while the infeed system is active. The attendant shall stop the mechanical infeed system when an employee is endangered by the brush chipper. The attendant shall have no other duty except for observing brush chipper use and protecting the operator and other employees in the machine area who may be endangered by the brush chipper when the infeed mechanism is engaged. The exception to this requirement for an attendant will be when the chipper has a device which activates on contact, and an approve presence sensing system (or other approved device) that meets the regulations set forth in the regulation.” Further, David Marren supports the 36 month time frame to conform to their proposal. However, David Marren does not support the 36 month time frame for section 3424(c)(7) as originally proposed. David Marren suggests including “(i.e. bump bar, emergency stop switch)” to section 3424(c)(7)(A).

No action taken.

#### **Section 3424(c)(8)**

Jeff Buchanan supports section 3424(c)(8).

No action taken.

#### **Section 3424(c)(9)**

Jeff Buchanan supports section 3424(c)(9). However, he opposes the five year retention requirement for test records.

In written comments David Marren opposed the five year period for retention of records.

No action taken.

#### **Section 3424(c)(10)**

No action taken.

**Section 3424(c)(11)**

Alternative was proposed by Peter Gerstenberger. Alternative discussed later in the meeting. See “Section 3424(c)(11), TCIA proposed amendment.”

In written comments David Marren proposed striking the word “centerline” and replacing the word “hopper.” David Marren suggested using terms and measurements common to all chipper manufacturers for clarity.

No action taken.

**Section 3424(d)(1), (d)(1)(A) and (B)**

Peter Gerstenberger questioned the existence/availability of third party validation organizations.

In written comments David Marren also questioned the availability of third party validation organizations. Further David Marren questioned the expertise and availability of third parties that could serve to recertify or revalidate presence sensing systems.

Jeff Buchanan raised concerns that third party validation was burdensome and an overreach. Buchanan questioned the necessity of third party validation.

No action taken.

**Section 3424(d)(2)**

Jeff Buchanan opposed requiring revalidation requirements of section 3424(d)(2).

No action taken.

**Section 3424(d)(3)**

Peter Gerstenberger opposed the use of a label. Peter Gerstenberger proposed alternatively maintaining documentation with the chipper instead of a label to denote recertification and revalidation.

No action taken.

**Section 3424(d)(4)**

No written or oral comments received.

### **Section 3424(d)(5)**

In written comments David Marren opposed this requirement. Caitlin Klingenberg raised concerns that the proposal does not differentiate between presence sensing systems which are integrated with the brush chipper and presence sensing systems installed on an aftermarket basis.

No action taken.

### **Section 3424(d)(6)**

Caitlin Klingenberg raised concerns that the proposal does not differentiate between presence sensing systems which are integrated with the brush chipper and presence sensing systems installed on an aftermarket basis.

No action taken.

### **Section 3424(d)(7)**

Peter Gerstenberger proposed this requirement be stricken from the proposal. Caitlin Klingenberg and Jeff Buchanan concurred.

In written comments previously submitted by The F.A. Bartlett Tree Expert Company, David Marren opposed this requirement.

Committee Chair will take under advisement striking proposed section 3424(d)(7).

### **Section 3424 Appendix A**

In written comments previously submitted by The F.A. Bartlett Tree Expert Company, David Marren commented that the information in Appendix A does not provide enough additional information to understand both proposed sets of Certification and Validation. Marren reiterated comments highlighted previously (see “Section 3424(d)(1), (d)(1)(A) and (B)” above).

### **Section 3424 Appendix A,(A) General Design Certification/Validation Requirements**

TCIA, the Petitioner, and Vermeer representatives voiced opposition to the proposal. No commenters supported the proposal. Caitlin Klingenberg questioned whether the third party validation organization would be responsible for setting performance and operational criteria. The Chair stated those criteria would be set by the manufacturer of the presence sensing system, the manufacturer or the entity who the manufacturer hires to design or develop the presence sensing system. That entity would be responsible for making the claims which a third party validation organization would verify.

Steve Talsma commented on electromechanical tolerance under Appendix A (A)(3)(b.)(1)(i). Steve Talsma asked for clarification and raised ISO 13766 as an example.

Proposal taken under advisement by the Committee Chair.

**Section 3424 Appendix A,(B) Substantial Modifications**

No action taken.

**Section 3424 Appendix A,(C) Installation Certification/Validation Requirements**

Caitlin Klingenberg commented that Appendix A (C)(1)(a.) implies that the presence sensing system would be a separate manufactured device and not an integrated component of the brush chipper. Caitlin Klingenberg suggested “a. evaluate and test the PSS **installation**.”

Proposal taken under advisement by the Committee Chair.

**Section 3424 Appendix A,(D) Recertification/Revalidation Requirements**

Jeff Buchanan raised concerns regarding the phrase “significant component.” Jason Denning suggested striking “significant” to read “When a failure of a **significant** component has occurred...”. In post committee written comment, JD Friend opposed striking “significant.”

Caitlin Klingenberg suggested a similar modification to Appendix A (D) provisions which mirror those concerns raised under Appendix A (C).

Proposal taken under advisement by the Committee Chair.

**Section 3424(c)(1), TCIA proposed amendment**

Peter Gerstenberger proposed:

“(1) Each rotary drum- ~~tree or brush chipper~~ or disk-type tree or brush chipper **not equipped with a mechanical infeed system** shall be equipped with an infeed hopper not less than 85 inches, measured from the blades, ~~or knives~~ **or pinch point of the feed wheels** to ground level over the centerline of the hopper, and shall have sufficient height on its side members so as to prevent personnel from contacting the blades/~~or knives~~/**pinch point** of the machine during normal operations.” Cal/OSHA representatives Eric Berg and Jason Denning supported the proposed change. Vermeer representative, Caitlin Klingenberg supported the proposed change. Jeff Buchanan, Tree service representative, supported the proposed change. No objections were heard.

Proposal taken under advisement by the Committee Chair.

**Exception to Section 3424(c)(7), TCIA proposed amendment**

Peter Gerstenberger proposed: “Exception to 3424(c)(7) brush chippers not equipped with **either both (A) or and (B) shall have an attendant stationed at a location within immediate reaching distance of the quick stop and reversing device **activating lever** described in 3424(c)(6) **immediately before and during the time that co-worker(s) are feeding material into the chipper while the infeed system is active.** The attendant shall stop the mechanical infeed system when an employee is endangered by**”

the brush chipper. Brush and other materials shall only be fed into the brush chipper when the attendant is present. The attendant shall have no other duties except for observing brush chipper use and protecting the operator and other employees in the machine area who may be endangered by the brush chipper. The employer shall provide effective training to attendants on the operation of the brush chipper and all safety systems for the brush chipper.”

[Committee Chair notes that the proposed change must be considered with a section 3424(c)(7) proposal which requires “one or more” rather than “both” a presence sensing system and a device that acts on contact.]

However, in written comments Gerstenberger raised concerns over the cost of adding an attendant and Cal/OSHA’s ability to enforce a chipper attendant requirement.

Proposal taken under advisement by the Committee Chair.

### **Section 3424(c)(11), TCIA proposed amendment**

Peter Gerstenberger in written comments proposed and further clarified at the committee meeting: “~~(7)(11) Rotary drum or disk type b~~**Brush** chippers shall be fed from slightly behind and to the side of the hopper, and the operator shall immediately turn away from the feed table when the brush is taken into the ~~rotor~~ blades/knives or feed mechanism. No part of the operator’s body shall pass beyond the plane of the infeed hopper. The operator shall not use their feet to push material into the infeed hopper and shall not stand on the feed table while the chipper is operating.”

Steve Talsma raised concerns regarding the term “hopper” and sought a definition. Peter Gerstenberger stated there was no definition for hopper in the ANSI Z133 code.

Caitlin Klingenberg suggested an Action Item to prepare a definition of “hopper.”

Proposal taken under advisement by the Committee Chair.

### **Economic and Fiscal Impact Data Sources**

The Committee Chair sought from the committee data sources for the economic and fiscal impacts of changing brush chipper requirements. Monarch Landscape Companies representative William Owen (previously representing Arborwell) suggested the California Air Resources Board as a source for data on brush chippers. The Committee Chair shared that the California Air Resources Board was able to provide brush chipper information. Trevor Koolmees representing Vermeer Corporation shared that Vermeer is aware of approximately 10,000 Vermeer brush chippers operating in California. The information is based on “registration data” which does not account for units that leave California or are brought in from other states. Jeff Buchanan suggested additional local jurisdictions of the Air Resources Board.



### **Brush Chipper Service Life**

Caitlin Klingenberg suggested sharing the expected equipment life of a brush chipper. Treavor Koolmees opined that chippers could operate for 10 to 20 years based on Vermeer's own information. Jeff Buchanan similarly recounted information of 12 years of service life from an Illinois municipality. The Committee Chair suggested 10 years as a service life estimate for brush chippers. Jeff Buchanan and Caitlin Klingenberg concurred.

### **North American Industry Classification System**

The Committee Chair sought input from the committee regarding code designations under the North American Industry Classification System (NAICS) which could be leveraged to identify types of employers impacted by the changes to brush chipper regulations. The Committee Chair identified 561730 as the NAICS code which encompasses landscape and tree work and asked the committee if any other NAICS codes capture employers impacted.

### **Contractors State Licensing Board**

Peter Gerstenberger suggested the California Contractor State Licensing Board, narrowing to C-61 "Limited Specialty" Contractors, specifically D-49 "Tree Service" contractors.

### **Bureau of Labor Statistics Tree Trimming Employees in California**

The Committee Chair raised for consideration U.S. Bureau of Labor Statistics (BLS) data for 2022 which estimated 7,490 tree trimming employees in California. The Committee Chair sought from the committee whether 7,490 tree trimming employees was a viable number for cost estimates. Peter Gerstenberger, having reviewed the similar data, opined that the BLS employment statistics significantly underestimates the actual employment statistics. Jeff Buchanan concurred.

### **California Employment Development Department (EDD)**

The Committee Chair suggested that an additional source of information identified was California Employment Development Department. The Committee Chair shared that a lot of the businesses registered with EDD were companies of less than 5 employees. The Committee Chair sought additional input from the committee regarding data sources for the impact to small businesses.

### **State and Local Government Impact**

The Committee Chair sought from the committee how to identify both state and local agencies using brush chippers. Jeff Buchanan suggested CalFire and State Parks.