

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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Attachment No. 2

INITIAL STATEMENT OF REASONS

CALIFORNIA CODE OF REGULATIONS

TITLE 8: Chapter 4, Subchapter 7, Article 59, Section 4324
of the General Industry Safety Orders

Dust Collection Systems for Woodworking Machines**SUMMARY**

This rulemaking was initiated in response to a request from the Division of Occupational Safety and Health (Division) dated December 3, 2004, to amend Title 8, General Industry Safety Orders (GISO), Section 4324 regarding dust collectors used in the woodworking industry. The newest edition of the National Fire Protection Association (NFPA) standard 664-2002, *Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities* has reversed the prohibition on indoor dust collection equipment found in the 1998 and older editions. The NFPA - 2002 standard recognizes that small, inexpensive "enclosureless bag-type dust collectors" (EDC) have become commonplace in the past several years. The proper installation and safe use of these EDC's benefits both the woodworking industry and their employees because they can be purchased by small and medium-sized woodworking operations that cannot afford a centralized cyclone or baghouse system. The proposed amendments would incorporate requirements from NFPA 664-2002.

SPECIFIC PURPOSE AND FACTUAL BASIS OF PROPOSED ACTION**Section 4324. Exhaust Systems.**

Section 4324 provides requirements for exhaust systems used for the removal of sawdust and chips produced by woodworking machines. The proposal would change the title of the section by replacing "Exhaust" with "Dust Collection." This revision is necessary to eliminate confusion between "exhaust" and "dust collection" systems and be consistent with the terms used in NFPA 664.

Subsection (a)

New proposed subsection (a) would describe the purpose and scope of the standard, which is to provide requirements for dust collection systems used for the removal of wood dust and chips produced by woodworking machines. The proposal adds a note to inform the reader that

additional requirements for all mechanical ventilation systems are contained in Section 5143. Additionally, the proposal would replace the term “exhaust” with “dust collection” and the term “sawdust” with “wood dust.” These revisions are necessary to improve clarity and provide consistency with terms used in NFPA 664.

Subsection (b)

The requirements of existing subsection (b) are proposed to be moved to new subsection (e). The proposal would add definitions for “dust collection system,” “dust collector,” and “enclosureless bag-type dust collector” in revised subsection (b). These terms and definitions are nearly identical to those used in NFPA 664 except editorial changes have been made to improve clarity. The definitions are necessary to clearly identify the components of dust collection systems and the different types of dust collectors allowed.

Subsections (3)(A)-(E) specify five conditions that must be satisfied for a dust collector to be considered an “enclosureless bag-type dust collector.” Subsections (3)(A), (3)(B), and (3)(D) are conditions that are necessary to ensure dust collectors are not enclosed in a manner that creates an explosion hazard if an explosive concentration of combustible dust is ignited inside the collector. Subsection (3)(C) reduces the risk of an explosion, since shaking or blowing the dust off of the inside surface of the bag, especially while the dust collection system is operating, can produce an explosive concentration of airborne dust inside of the bag. Subsection (3)(E) is necessary to limit the use of EDC’s in woodworking operations where large volumes of wood dust and chips are produced. A properly designed central dust collection system with a cyclone and/or baghouse provides more effective fire protection for these large scale operations.

Subsection (c)

The requirements of existing subsection (c) are proposed to be moved to new subsection (f). The proposal would add language to revised subsection (c) to specify the acceptable locations for dust collectors. The provisions of subsection (c) do not apply to dust collectors having a maximum capacity of 500 cfm or less. This exemption is necessary to allow the use of small dust collectors that are commonly attached to individual woodworking machines, especially in small shops. These small dust collectors have been widely used for many years and present no apparent fire hazard.

Except for formatting differences the provisions of subsections (c)(1) -(3) are the same as those in Section 5174(i), which pertains to dust collectors for combustible dusts that present an explosion hazard, and are consistent with NFPA 664. It is necessary to specify where dust collectors used for combustible dusts are allowed to be located because they present an explosion hazard if they are not liquid spray type collectors and they are enclosed without adequate explosion vents. It is necessary to specify conditions for locating EDC’s inside of buildings because they present a fire hazard and a potential deflagration hazard. The criteria for locating EDC’s inside of buildings, which are contained in subsection (4)(A)-(G), are substantially the same as those specified in NFPA 664. However the proposal provides an exception, as discussed in the following paragraph. Subsections (4)(A)-(G) are necessary to control potential ignitions sources, prevent injury from potential dust collector fires, and to prohibit the use of EDC’s for

sanding and planing operations that produce large quantities of fine wood dust that presents a relatively high risk of fire and potential deflagration. Subsection (4)(F), which prohibits an EDC from being located within 20 feet of an employee workstation or an emergency egress route, and subsection (4)(G), which prohibits an EDC from being located within 20 feet of each other in the same room, are intended to prevent a fire in an EDC from spreading to another EDC, injuring a machine operator, or blocking an emergency exit route. These provisions are necessary because tests conducted under controlled conditions demonstrate that EDC's can produce horizontal and vertical jets of flame nearly ten feet long, although a sufficient concentration of fine wood dust and a strong ignition source was required.¹

The proposal exempts dust collectors that have a maximum air-handling capacity of 1500 cubic feet per minute (cfm) from the provisions of subsections (4)(F) and (4)(G), which prohibit an EDC from being located within 20 feet of another EDC, an employee work station, or an emergency egress route. Several advisory committee members stated that a 20 foot separation distance was not practical because woodworking facilities often have several EDC's and do not have enough floor space to provide the specified 20 foot separation distances. It was the consensus of the advisory committee that an exemption was necessary and appropriate for EDC's with a capacity of 1500 cfm or less. Although NFPA 664 does not provide a similar exemption, it does provide two means of relief from the requirement to provide a 20 foot separation distance. First, the NFPA standard only applies to woodworking operations that occupy areas of more than 5000 square feet or where dust-producing equipment requires an aggregate dust collection flow rate of more than 1500 cfm. Secondly, the NFPA standard provides the option of complying with either the standard's prescriptive-based provisions (e.g. 20 foot separation distance) or a performance-based design that is developed using calculations, references, and other data.

Subsection (d)

New proposed subsection (d) would require that ducts and flexible hoses on dust collection systems be constructed of metal or other conductive material. This provision is necessary to control static charges that can buildup when wood dust and chips travel at high velocities in non-conductive ducts and hoses. Static charges can produce sparks that are capable of igniting combustible dusts in the dust collection system.

Subsection (e)

The proposal moves existing subsection (b) to new subsection (e) and adds language to clearly identify that the subsection addresses guards and collection hoods. The reference to Section 3943 is revised to reference Section 3942, which requires guards shall be constructed of substantial material as listed in Table G-1. That table lists construction materials for guards and specifies the minimum thickness for each type of material. Section 3943 contains no specifications related to the thickness of materials used to construct guards. The revision is necessary to reference the

¹ Dust Explosions from Unenclosed Sock Filters, CRR176, Health and Safety Executive Books 1998, ISBN 0 7176 1577 4.

correct Section of the GISO, which specifies the minimum thickness of materials used to construct guards.

Subsection (f)

The proposal moves existing subsection (c) to new subsection (f) and adds language to clearly identify that the subsection addresses the removal of other refuse.

DOCUMENTS RELIED UPON

1. Request for New or Change in Existing Safety Order, DOSH Form 9, December 3, 2004.
2. National Fire Prevention Association Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities, NFPA 664 – 2002 Edition.
3. Dust Explosions from Unenclosed Sock Filters, CRR176, Health and Safety Executive Books 1998, ISBN 0 7176 1577 4.

These documents are available for review Monday through Friday from 8:00 a.m. to 4:30 p.m. at the Standards Board Office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.

REASONABLE ALTERNATIVES THAT WOULD LESSEN ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES

No reasonable alternatives were identified by the Board and no reasonable alternatives identified by the Board or otherwise brought to its attention would lessen the impact on small businesses.

SPECIFIC TECHNOLOGY OR EQUIPMENT

This proposal will not mandate the use of specific technologies or equipment. The proposal would clarify that EDC's are allowed to be used under specific conditions, which are nearly identical to the National Fire Prevention Association Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities, NFPA 664 – 2002 Edition. Employers are currently using EDC's in compliance with NFPA 664 – 2002 Edition. Existing Section 5174 requires dust collectors for combustible dusts that present an explosion hazard shall be located outdoors or in detached rooms of fire-resistant construction and provided with adequate explosion vents, except that liquid-spray type collectors may be located within buildings. The proposal would clarify that employers are allowed to use EDC's within buildings for collecting wood dust and chips, provided that specific conditions are satisfied, which prevent the dust collector from presenting an explosion hazard.

COST ESTIMATES OF PROPOSED ACTION

Costs or Savings to State Agencies

No costs or savings to state agencies will result as a consequence of the proposed action.

Impact on Housing Costs

The Board has made an initial determination that this proposal will not significantly affect housing costs.

Impact on Businesses

The Board has made a determination that this proposal will not result in a significant, statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states. Also, see the statement above under the heading “Specific Technology or Equipment.”

Cost Impact on Private Persons or Businesses

The Board is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action. Also, see the statement above under the heading “Specific Technology or Equipment.”

Costs or Savings in Federal Funding to the State

The proposal will not result in costs or savings in federal funding to the state.

Costs or Savings to Local Agencies or School Districts Required to be Reimbursed

No costs to local agencies or school districts are required to be reimbursed. See explanation under “Determination of Mandate.”

Other Nondiscretionary Costs or Savings Imposed on Local Agencies

This proposal does not impose nondiscretionary costs or savings on local agencies.

DETERMINATION OF MANDATE

The Occupational Safety and Health Standards Board has determined that the proposed standard does not impose a local mandate. Therefore, reimbursement by the state is not required pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code because the proposed amendments will not require local agencies or school districts to incur additional costs in complying with the proposal. Furthermore, these proposed amendments do not constitute a “new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution.”

The California Supreme Court has established that a “program” within the meaning of Section 6 of Article XIII B of the California Constitution is one which carries out the governmental function of providing services to the public, or which, to implement a state policy, imposes unique requirements on local governments and does not apply generally to all residents and entities in the state. (County of Los Angeles v. State of California (1987) 43 Cal.3d 46.)

The proposed standard does not require local agencies to carry out the governmental function of providing services to the public. Rather, the standards require local agencies to take certain steps to ensure the safety and health of their own employees only. Moreover, the proposed standards do not in any way require local agencies to administer the California Occupational Safety and Health program. (See City of Anaheim v. State of California (1987) 189 Cal.App.3d 1478.)

The proposed standard does not impose unique requirements on local governments. All employers - state, local and private - will be required to comply with the prescribed standard.

EFFECT ON SMALL BUSINESSES

The Board has determined that the proposed amendments may affect small businesses. However, no economic impact is anticipated. Also, see the statement above under the heading "Specific Technology or Equipment."

ASSESSMENT

The adoption of the proposed amendments to this standard will neither create nor eliminate jobs in the State of California nor result in the elimination of existing businesses or create or expand businesses in the State of California.

ALTERNATIVES THAT WOULD AFFECT PRIVATE PERSONS

No reasonable alternatives have been identified by the Board or have otherwise been identified and brought to its attention that would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.