

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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**FINAL STATEMENT OF REASONS**

CALIFORNIA CODE OF REGULATIONS

TITLE 8: Chapter 4, Subchapter 7, Article 15,
Section 3482 of the General Industry Safety Orders

Bulk Storage of Loose Materials

There are no modifications to the information contained in the Initial Statement of Reasons.

SUMMARY AND RESPONSE TO ORAL AND WRITTEN COMMENTS**I. Written Comments**

Mr. David W. Smith, CSP, PE, Ensign Safety & Health Advisory, by letter dated September 18, 2000.

Comment:

Mr. Smith stated that the proposal is a necessary first step towards regulatory clarity and worker protection and that subsequent rulemaking to consider the federal scheme of flat storage structures and the state's regulation, 8 CCR, Section 5178 is also needed. Mr. Smith stated that he supports the proposed repeal of subsection (e) pertaining to concrete storage structures, given the fact that this requirement has been deleted from Title 24. Mr. Smith noted that since silos made from steel or other building materials present identical grain engulfment and entrapment hazards to that of concrete, there is no need to single out concrete.

Mr. Smith also stated that it has been his experience in dealing with various types of silo structures that the danger to workers by concrete silos as opposed to steel is that of collapse. Concrete silos are constructed of concrete tiles, which are susceptible to deformities due to the setting of footings and the shifting of grain. These silos can also be significantly affected by earthquakes or other earth instability. Consequently, Mr. Smith stated it makes sense to repeal this requirement as proposed by Board staff.

Mr. Smith concluded by asking the Board to adopt the proposed modification.

Response:

The Board will consider language pertaining to flat storage structures as contained in the federal Grain Handling Standard for placement on the upcoming 2001 rulemaking work-plan. If Board staff does place this issue on the work-plan for action and an advisory committee is convened, Mr. Smith will be notified so as to provide an opportunity for participation in the Board's advisory committee process.

The Board acknowledges Mr. Smith's comment and support for the proposed repeal of the existing subsection (e). The Board also wishes to thank Mr. Smith for his participation in the Board's rulemaking process.

Ms. Ann Quinn, Executive Director, California Warehouse Association (CWA), by letter dated September 15, 2000.

Comment:

Ms. Quinn stated that she is concerned with the proposed rulemaking because it continues the assumption that every pile of loose material poses a risk of engulfment and entrapment to employees. It has been the experience of the CWA that not every pile of loose material poses such risks. CWA statistics tend to support this contention.

Ms. Quinn stated that there are many situations where access to piles is necessary and that the Board's rulemaking action, as proposed, would not enable CWA's constituents to operate in the most safe and cost effective manner possible. Ms. Quinn stated that the cost of compliance with the proposed regulation would be onerous and may lead to a severe competitive disadvantage for those who attempt to comply.

Ms. Quinn submitted a suggested modification that would modify the base assumption of the regulation without altering the intent or enforceability of the standard and would allow members flexibility to conduct their daily business.

The CWA's proposed modification would add the following phrase after the word "material" in the first sentence of the newly re-lettered subsection (e):

"...of such shape or characteristic that may pose an engulfment/entrapment or cave-in hazard to employees..."

Ms. Quinn closed by stating that the CWA applauds Board staff's efforts to take up the proposed rulemaking action and stated that she supports the deletion of the former [sub]section (e).

Response:

The proposed revisions to Section 3482 are merely intended to clarify the existing regulation which prohibits employees from working or climbing on piles of loose bulk materials (free-flowing materials). The proposed amendments do not in any way substantively alter the existing

requirement by imposing new or added requirements upon employers other than that which has been, and continues to be, in effect. Therefore, the CWA's claim that the cost of compliance with the revised standard would result in adverse economic impact for California employers or somehow create a situation where by some employers would be at a competitive disadvantage appears to be without basis.

Ms. Quinn also states that CWA statistics appear to support the idea that not every pile of loose, bulk material poses an engulfment/entrapment hazard. However, no statistical information was provided with the CWA comment, nor are any statistics discussed in the September 15, 2000 letter. Without some basis for objectively and scientifically determining what the relative engulfment/entrapment risks are for different materials, Board staff believes that piled bulk, free flowing material should be treated as posing an engulfment/entrapment risk to employees unless proven otherwise.

Board staff does not agree with the suggested modification to renumbered Section 3482(e) because it is unclear what is meant by the phrase "of such shape and characteristic". Specifically, the language does not define the particle shape(s) and/or characteristic(s) that identify a given loose stored material as one that would pose an employee engulfment or entrapment hazard. During the course of Board staff's investigation of previous variances granted by the Board, staff recognized that there are indeed a great many physical as well as environmental factors which determine the degree of hazard posed by a given material when piled. Without specifically stating what these factors are, it would be practically impossible for an employer to make an accurate assessment of the potential for engulfment/entrapment posed by a given stored loose material. Consequently, the proposed language is problematic.

For these reasons, the Board believes modification of the proposal to include the language proposed by Ms. Quinn is unnecessary. The Board thanks Ms. Quinn for her comments and participation in the Board's rulemaking process.

Mr. Richard L. Matteis, Executive Vice President, California Seed Association (CSA), by letter dated September 15, 2000.

Comment:

Mr. Matteis' comment letter is substantially similar in content to that of Ms. Ann Quinn of the CWA. Consequently, Board staff refers the reader to the comments contained in Ms. Quinn's September 15, 2000 letter to the Board.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000. Based on Board staff's response to Ms. Quinn's letter, the Board believes no modification of the proposal is necessary. The Board thanks Mr. Matteis for his comments and participation in the Board's rulemaking process.

Mr. Kevin L. Clutter, Director of Technical Services, California Grain and Feed Association (CGFA), by letter dated September 15, 2000.

Comment:

Mr. Clutter's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Tim Coleman, Risk Manager, J.D. Heiskell & CO. & OH Kruse Grain and Milling, by letter dated September 18, 2000.

Comment:

Mr. Coleman's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. James H. Greer, President, Kingsburg Cotton Oil Company of California, by letter dated September 19, 2000.

Comment:

Mr. Greer's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Michael E. Rue, Managing Partner, Cattlett Warehouse, by letter dated September 18, 2000.

Comment:

Mr. Rue's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Robert T. Gilbert, President, A. L. Gilbert Company, by letter dated September 18, 2000.

Comment:

Mr. Gilbert's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Mark Oldenkamp, Vice President of Operations, Valley Fresh Foods, Inc., by letter dated September 18, 2000.

Comment:

Mr. Oldenkamp's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Charles Keeney, General Manager, Rice Dryer, Inc., by letter dated September 18, 2000.

Comment:

Mr. Keeney's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Kevin C. Dennis, General Manger, De Pue Warehouse Company, Inc., by letter dated September 16, 2000.

Comment:

Mr. Dennis' comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Marty Stripling, Manager, River Garden Farms Company, by letter dated September 16, 2000.

Comment:

Mr. Stripling's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Ms. Nickie Lodi, Purchasing Manager, Coast Grain Company, by letter dated September 18, 2000.

Comment:

Ms. Lodi's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Tony Correia, Manager, Shanco Commodities Co. Inc., by letter dated September 18, 2000.

Comment:

Mr. Correia's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Glenn Bach, Plant Manager, Willowbrook Feeds Inc., by letter dated September 18, 2000.

Comment:

Mr. Bach's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Carl D. Hoff, President, Butte County Rice Growers Association, by letter dated September 16, 2000.

Comment:

Mr. Hoff's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Ron Rubin, Manager, K-F Seeds, by letter dated September 17, 2000.

Comment:

Mr. Rubin's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. James M. Andreoli, President, Baker Commodities Inc., by letter dated September 18, 2000.

Comment:

Mr. Andreoli's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Richard Padgett, General Manager, Glenn Growers, by letter dated September 18, 2000.

Comment:

Mr. Padgett's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Rick Poinciano, Manager, Rancho Esquon Partners, by letter dated September 19, 2000.

Comment:

Mr. Poinciano's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Tim Kelleher, Partner, T & B Farms, by letter dated September 20, 2000.

Comment:

Mr. Kelleher's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

Mr. Roger Isom, Vice President and Director of Technical Services, California Cotton Ginners Association, by letter dated September 20, 2000.

Comment:

Mr. Isom stated that as presently written, Section 3482 forbids employees from working or climbing on a pile of loose material. Mr. Isom stated that upon review of historical accident/injury data, the California Cotton Ginners Association (CCGA) is unaware of any accident data from working or climbing on loose cottonseed.

Mr. Isom notes that over the years, many CCGA members have applied for variances from specified requirements contained in Section 3284. It is Mr. Isom's understanding that the only concern exists when material is being removed from the pile and when the pile is not at its normal angle of repose, whatever that angle may be. Based on the previously issued variances, it appears to Mr. Isom that the Board concurs with that belief. Mr. Isom also mentioned that the

advisory committee, convened by Board staff in March 2000, also seemed to concur with that belief.

Consequently, the CCGA requests the Board to modify Section 3482 to include language that states: "...only when the pile is of such shape and/or characteristic, that it may pose danger of engulfment/entrapment and/or cave-in.

Mr. Isom stated that the CCGA believes that the existing prohibition should be limited to those situations where the danger of engulfment/entrapment may occur, such as when the pile is left with a "face" or "cut". Mr. Isom stated that incorporating something like the suggested modification would accomplish just that kind of limitation.

Response:

Section 3482 prohibits employees from walking or working upon the surface of loose (free-flowing) material unless the employer provides for safe access/egress from the piled material. Section 3482 provides the employer with several alternatives or methods to be used when it is necessary for employees to work, or walk upon piled loose material. Section 3482 is intended to address the hazard of engulfment/entrapment of the employee's body in the event of a pile cave-in. Engulfment/entrapment can result in the employee's body being crushed and suffocated.

Over the past several years, the Standards Board has received applications for a permanent variance from one or more provisions of Section 3482, and has in each case granted the variance request subject to a set of conditions designed to provide safety equal or superior to what is afforded the employee by Section 3482. The variances that have been granted by the Board pertained to cottonseed and pre-hulled paddy rice and no other materials. In each case, Board staff evaluated the unique degree of hazard posed by each material based on numerous factors including, but not limited to: particle characteristics, environmental factors, methods of storage, ongoing processes, etc. The variance experience has taught Board staff that assessment of engulfment/entrapment hazards posed by a given material is quite complex, given the inherent degree of variability each material storage situation creates.

The Advisory Committee, convened in March of 2000, also recognized the inherent complexities of bulk stored loose materials as they relate to the hazard of engulfment/entrapment. The committee generally agreed that the predominant hazards posed by bulk stored loose materials occur when the employee walks on a pile, especially near the face or cut of a pile. The committee also recognized that there are many factors which go into the "hazard equation" and that it is better to assume a pile presents an engulfment hazard until prescriptive and specific controls unique to each material, taking into account the variables, can be developed to control the hazard.

Board staff generally agreed with the committee's position as described above, and for that reason is concerned about the CCGA's suggested modification of Board staff's rulemaking proposal. Board staff believes the proposed modification is unclear because it does not take into account the unique properties and variables that affect the storage of any given material. There is nothing in the suggested modification to clarify to the employer what is the shape or characteristic of a loose piled material that would contribute to the hazard of

engulfment/entrapment/cave-in. Board staff believes that the absence of specific criteria would inevitably lead to employer confusion, or worse; arbitrary determination by an employer that a given loose piled material does not pose a hazard. An unprotected employee could be placed in harms way by walking or working on a pile of material judged by the employer to not pose an engulfment/entrapment threat resulting in serious employee injury or worse. For these reasons, the Board is not persuaded to modify Board staff's proposed language as suggested by the CCGA.

Mr. Robert Gomes, General Manager, Simon Newman Company, by letter dated September 18, 2000.

Comment:

Mr. Gome's comment letter is substantially similar to that of Ms. Ann Quinn, CWA, dated September 15, 2000. Therefore, Board staff refers the reader to the comments contained in Ms. Quinn's letter.

Response:

See Board staff's response to Ms. Ann Quinn's comment letter to the Board dated September 15, 2000.

For these reasons, the Board believes no modification of the proposal is necessary. The Board thanks the commentors for their participation in the Board's rulemaking process.

II. Oral Comments

There were no oral comments received at the September 21, 2000 Public Hearing in Los Angeles, California.

DETERMINATION OF MANDATE

These regulations do not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed regulation. No alternative considered by the Board 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 adopted action.