

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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**FINAL STATEMENT OF REASONS**

CALIFORNIA CODE OF REGULATIONS

TITLE 8: Chapter 4, Subchapter 7, Group 2, Article 10, New Section 3395
of the General Industry Safety Orders

Heat Illness Prevention**MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM
THE 45-DAY PUBLIC COMMENT PERIOD**

There are no modifications to the information contained in the Initial Statement of Reasons except for the following substantive, non-substantive and sufficiently related modifications that are the result of public comments and/or Board staff evaluation.

Subsection 3395(c), Provision of water.

This subsection, as originally noticed, provides that a sufficient quantity of water is one quart per employee per hour. It is proposed to add "Where the supply of water is not plumbed or otherwise continuously supplied." This modification is made to clarify that in outdoor places of employment that have access to plumbed or other continuous supplies of water, that amount of water is sufficient and would far exceed the one quart per employee per hour requirement. The purpose and necessity for this modification is to recognize that plumbed or other continuous supplies of water is an adequate way to provide employees with drinking water and does not need to be measured out or supplemented with other sources of water to meet the one quart per employee per hour requirement.

Subsection 3395(d), Access to shade.

This subsection, as originally noticed, provides that employees suffering from heat illness or needing a preventive recovery period shall have access to an area with shade. It is proposed to add an exception to allow non-agricultural employers to provide cooling measures other than shade during the preventative recovery period when the employer can demonstrate the alternative is at least as effective as providing shade. This modification is made to provide non-agricultural employers with an alternative to providing an area with shade when it can be demonstrated to be at least as effective. Other than allowing an alternative cooling method to shade, this modification has no effect on the requirement to provide a preventative recovery period. The purpose and necessity for this modification is to recognize that shaded areas are not always the most appropriate or effective means of giving employees relief from the direct affects of the sun.

Subsection 3395(e)(1)(C), Training on the importance of drinking water frequently.

This subsection, as originally noticed, provides that training shall include an explanation of the importance of drinking small quantities of water frequently under extreme conditions of work and heat. It is proposed to replace “extreme conditions of work and heat” with “when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.” This modification is made to more clearly state under what conditions it is important to increase the consumption frequency of water. The purpose and necessity for this modification is to more clearly state the type of conditions that necessitate the more frequent consumption of water.

Subsection 3395(e)(1)(F), Training on the importance of reporting.

A nonsubstantive addition of “to employees” is added to clarify the focus of the required training, and who needs to report signs and symptoms to the employer.

Subsection 3395(e)(1)(H), Training on the emergency procedures.

A nonsubstantive addition of “The employer’s” is added to clarify that the emergency contact procedures are those of the employer.

Subsection 3395(e)(1)(I), Training on providing worksite directions.

This subsection, as originally noticed, provides that training shall include an explanation of how to provide directions to the worksite. It is proposed to clarify that employers must have a procedure to ensure that appropriate directions will be provided to emergency responders. This modification is made to more clearly state under what conditions and to whom the directions are to be provided. The purpose and necessity for this modification is to ensure that the employer has a procedure and all employees are trained on that procedure so emergency responders are given clear and precise directions to the worksite in the event of an emergency.

Subsection 3395(e)(3), Employer procedures in writing.

Subsection (e), as originally noticed, provides that the employer shall have procedures that employees and supervisors need to be aware of through training. It is proposed to add a new subsection (e)(3) to specify that the procedures specified in subsections (e)(1)(B), (G), (H), and (I) shall also be in writing and available upon request to employees and the Division. This modification is made to ensure that the procedures that employees are trained on are documented and available for future reference. The purpose and necessity for this modification is to ensure that the employer documents their procedures in writing and that these written procedures be available for employees and the Division to review.

Summary and Response to Oral and Written Comments:

I. Written Comments

James Abrams, California Hotel & Lodging Association, 2 letters dated March 14, 2006 and April 20, 2006

Comment #1: The scope of the proposed standard needs to be narrowed to focus on those outdoor work environments which present a risk of occurrence of heat illness, and to make it

clear that this does not include employees who have frequent access to indoor work environments. With specific reference to the lodging industry, a great many employees fit this latter description, such as bell staff, doormen, pool attendants, valet parking attendants, lifeguards, waiters/waitresses at poolside restaurants and the like. CH&LA respectfully submits that proposed Section 3395(a) be amended as follows:

(a) Scope and Application. This section applies to ~~the control of risk of occurrence of heat illness~~ outdoor places of employment where there is a risk of occurrence of heat illness and employees are not provided frequent or periodic access to indoor work environments. Employees who are typically provided frequent or periodic access to indoor work environments include valet parking attendants, food service wait staff, doormen, and pool attendants and lifeguards. ~~This section is not intended to exclude the application of other sections of Title 8, including, but not necessarily limited to, sections 1230(a), 1512, 1524, 3203, 3363, 3400, 3439, 3457, 6251, 6512, 6969, 6975, 8420 and 8602(e). This section applies to all outdoor places of employment.~~

Response: The commenter’s amended language suggests adding a two-part limit on scope and application, i.e., to be covered by section 3395 an outdoor workplace would have to be one “where there is a risk of occurrence of heat illness” and it would also have to be one where employees “are not provided frequent or periodic access to indoor work environments.” The emergency temporary standard upon which the proposed permanent rule is modeled included a limitation in subsection (a) on the scope of application to outdoor places of employment “at those times when the environmental risk factors for heat illness, as defined in (b), are present.” As stated in the Initial Statement of Reasons, the Board did not include this limitation on scope and application in the proposed permanent rule because of the variability of environmental risk factors and the resulting unpredictable nature of an employer determining when there is little or no risk, and so the Board declines to make the modification suggested by the comment. Furthermore, with regard to work that is only intermittently outdoors, it is the responsibility of the employer to determine if the time spent indoors satisfies the requirements for an adequate supply of water and shade for preventative recovery periods, thus leaving the employer with an obligation to provide training as required by subsection (e). Such training should be specific to the type of job and can be incorporated into other health and safety training such as that required by section 3203. Training and other applicable requirements of section 3395 are necessary for employees even intermittently exposed to outdoor environments. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #2: As shown in the suggested amended language to subsection (a) in comment #1 above, the references to other sections of Title 8 that can be applicable to prevention of heat illness should be deleted.

Response: In the interest of clear notification to employers of their other duties under Title 8 to prevent occurrence of heat illness, the Board continues to believe it is important to detail other Title 8 requirements related to prevention of heat illness with which employers are required to comply. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #3: On March 14, 2006 the commenter sent the Division a request for background information on the 25 heat cases referred to in the Division February 17, 2006 memorandum.

Response: The Division forwarded the background information to the commenter. The Board thanks Mr. Abrams for his comments and participation in the rulemaking process.

Thomas Bernard, University of South Florida College of Public Health, letter dated April 19, 2006

Comment #1: Based on the work/rest cycle recommendations of the Threshold Limit Value for heat stress and heat strain of the American Conference of Governmental Industrial Hygienists, and the evaluation of the reduction in Wet Bulb Globe Temperature that might be provided by shade, there appears to be a greater expectation of recovery in the shade than may be likely. Rest conditions may not be substantially cooler than work conditions and so longer recovery periods may be needed.

Response: The standard does not prohibit an employee from taking a recovery period longer than 5 minutes if that is needed or to take several recovery periods of 5 minutes or longer if that is the more appropriate response to prevent heat illness. In addition to this preventative recovery period requirement, employers need to be cognizant of the fact that even if they provide the required 5-minute preventive recovery period when requested, other applicable standards for first aid and emergency medical response, may additionally require adequate, appropriate, and reasonable response to possible symptoms of heat illness observed directly by the employer, or credibly reported by the employee or another individual observing the employee. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #2: Training requirements are important as a first line of defense against heat stress and related illnesses and should be specific to include plenty of fluids, self-determination of work and healthy lifestyle and reducing work expectations for employees who are not acclimatized to work in heat, as supported by the memorandum of February 17, 2006, entitled Cal/OSHA Investigations of Heat Related Illnesses.

Response: The Board concurs that training is important and believes that the training requirements proposed for the permanent standard are supported by this comment.

Comment #3: More specifics are needed requiring aggressive first aid procedures to address apparent heat stroke.

Response: First aid procedures are more specifically addressed by section 3400 and the other first aid standards referenced in subsection (a). The Board staff will convene a follow up advisory committee and look at possible future rulemaking to update and address heat illness related first aid issues in section 3400 and other Title 8 standards. The proposed standard includes training requirements intended to ensure that symptoms of heat illness are recognized

by employees and reported to supervisors well before they progress to serious heat illness. The proposed training standards also contain requirements to help assure that emergency medical services are obtained rapidly in response to symptoms of heat illness. The Board believes that these requirements address the concern of the commenter to the extent possible. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

The Board thanks Mr. Bernard for his comments and participation in the rulemaking process.

David Bonauto, Washington Department of Labor and Industries, Safety and Health Assessment and Research for Prevention Program (SHARP), letter received April 18, 2006 (letter undated)

Comment: The proposed requirement for access to shade is inadequate because victims of even minor exertional heat illness should be continuously monitored for more severe heat illness for at least 15 minutes, if not longer. If subsection (d) is intended to allow a period of observation of an employee with possible heat illness, a requirement should be included for observation by a trained co-worker or supervisor for a period of time sufficient to evaluate whether the worker will develop heat illness. Also, the Threshold Limit Value of the American Conference of Governmental Industrial Hygienists includes work/rest cycles for prevention of heat illness - a 5-minute time period for a "preventative recovery period" is inadequate and unlikely to be preventive of heat illness.

Response: The access to shade for workers suffering from heat illness is in addition to and does not supercede the general first aid/medical response procedures mentioned by the commenter and would be required under section 3400 or other applicable Title 8 standards. Those Title 8 standards are referenced in subsection (a) and it is not necessary to repeat portions of those first aid/medical response requirements in subsection (d). Also, see the response to Mr. Bernard's comment #1 regarding the minimum 5-minute preventative recovery period requirement. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

The Board thanks Dr. Bonauto for his comments and participation in the rulemaking process.

Letters dated April 19, 2006 from Marianne Brown, and from Barry Lubovski, Building and Construction Trades Council of Alameda County, AFL-CIO, and letters dated April 20, 2006 from Cookie Cameron, Communication Workers of America, Local 9412, Eric Frumin, UNITEHERE, Fran Schreiber, WorkSafe!, and Doug Ziegler, United Union of Roofers, Waterproofers, and Allied Workers.

Comment #1: At an absolute minimum the Board should assure that shade is made available during preventative recovery periods, meal periods, and during other rest periods the employer provides.

Response: See response to Anne Katten and Martha Guzman, California Rural Legal Assistance Foundation, and Georgina Mendoza, California Rural Legal Assistance, Inc., letter dated April 20, 2006, comment #2.

Comment #2: Preventative recovery periods should at a minimum be for 10 minutes.

Response: See the response to Mr. Bernard’s comment #1.

Comment #3: The training and emergency plans must be written so that there is a clear understanding of what the employer is doing in this regard.

Response: The Board agrees and has modified subsection (e) to require the procedures specified by subsections (e)(1)(B), (G), (H), and (I) to be in writing.

Comment #4: The OSH Standards Board is an advocate for worker health and safety. The law does not require consensus or agreement between the regulated community and those the agency is designed to protect. The law does not require balancing worker health with industry profits. Rather, the law requires the agency to protect a worker, to the extent feasible, from “material impairment of health or functional capacity even if such employee has regular exposure to a hazard regulated by such standard for the period of his working life.” An aggrieved employer or industry may challenge in court the economic or technological feasibility findings of the agency. The role of the Board is not as an impartial judge, but as an advocate for worker health and safety.

Response: The Board appreciates the commenters’ delineation of their view of the appropriate role of the Board. However, the comment is not specific to the proposed text and the Board believes that the proposed permanent standard for heat illness satisfies the statutory requirements referred to by the commenters. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #5: The commenters disagree with the narrow scope of this standard which only addresses the prevention of heat-related illness outdoors. As a result, this standard fails to protect many at-risk workers in other industries where heat causes deaths, such as laundries. The commenters believe the standards should address indoor as well as outdoor places of employment.

Response: The Board recognizes that risk of heat illness is not limited to outdoor work environments, and that in fact some of the most severe exposures to heat can occur in artificially heated environments. However, the experience of the Division in terms of reports of heat-related illness is that the vast majority of these most serious cases have occurred where the employee is working out of doors. The Board notes that in the course of advisory committee discussions of this proposed standard the Division committed to reconvening an advisory committee to address the risk of heat illness in indoor work environments, once the standard for outdoor workplaces is in place. The Board notes that even though the proposed standard is limited in the scope and application of its particular requirements to outdoor workplaces, employers with indoor

workplaces remain subject to the requirements of existing Title 8 standards, most notably with respect to Injury and Illness Prevention Program, First Aid and Emergency Services, and Provision of Drinking Water. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #6: The proposed permanent rule leaves the onus on the individual worker to ask for the preventative recovery period. Workers, particularly low wage workers, are not likely to ask for help because they fear they will lose their job. Too often we hear about workers losing their jobs or getting demoted if they voice complaints about not receiving rest and meal periods which are already required by law. Giving the worker the duty to ask for a preventative recovery period is not realistic. Inevitably, workers will risk their health and as a result suffer from heat related illness rather than jeopardize their employment. Requesting a preventative recovery period may not be possible when a worker is suffering from heat illness. Requesting a preventative recovery period is particularly problematic for an employee who is suffering from heat illness because one of the symptoms is confusion. Thus the employee may not even be able to ask for help.

Response: Hopefully with proper training and employer support employees will not be discouraged from taking preventive recovery periods as needed. Relying on employees who are properly trained and empowered to determine when to take such breaks is the most reliable means of implementing a break to prevent heat illness. It would be less appropriate for an employer to schedule such breaks since they may not be needed when provided. However, the standard does not prohibit employers from implementing such breaks so long as the employee is provided a preventative recovery period when they believe it is necessary. In addition, when a supervisor or other employee detects signs or symptoms of heat illness in an employee, the shade can also be used for those situations while appropriate first aid and/or medical response is provided. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #7: A 5 minute minimum recovery period is inadequate for a person suffering heat illness. Shade alone may not be sufficient to cool an ill worker.

Response: See the response to Mr. Bernard's comment #1.

Comment #8: Workers paid by piece rate may not ask for a preventative recovery period if it causes a pay loss.

Response: See the response to Ms. Katten et al's, comment #6.

Comment #9: The WorkSafe! proposal requires the employer to evaluate temperature, humidity, and exertion at a minimum. It provides flexibility for the employer but also allows the employer to rely on the American Conference of Governmental Industrial Hygienists (ACGIH) scientifically based quantitative guidelines for preventing heat related illness. The ACGIH approach is based upon measurement of temperature, humidity, air velocity, and sometimes work

effort. Using the ACGIH recommended Wet Bulb Globe Temperature (WBGT) approach is not only scientific, but also reasonable; it has been used for decades by the military.

Response: The Board recognizes that requiring employers to evaluate workplace conditions related to risk of heat illness was the subject of extensive discussion of the Division's advisory meetings on heat stress. The Board believes that such evaluations could be of value in many workplaces, especially indoors with artificial heat sources where temperatures have the potential to be controlled, and at the very least anticipated within a relatively narrow range. However, the Board also believes that requiring all employers with employees working outdoors to determine the WBGT temperature on a continuous, or even intermittent, basis would not substantially contribute to control of employee risk of heat illness while at the same time consuming resources that could have a greater effect implementing control measures, such as providing readily available drinking water along with shade and other means of cooling. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #10: In contrast to the American Conference of Governmental Industrial Hygienists' (ACGIH) scientifically based quantitative guidelines for preventing heat related illness, the Board's proposal for the permanent rule for heat illness prevention is not scientific. It is untested. It will not protect workers from heat related illness and will, inevitably, lead to more deaths in the future. While the proposed standard may meet the needs of political expediency, it is contrary to science and a violation of the law.

Response: The provision of drinking water, encouragement of its consumption, access to shade, self-determination of when preventative recovery periods are needed, and employee training are well-recognized heat illness control measures. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

The Board thanks Ms. Brown et al for their comments and participation in the rulemaking process.

Julianne Broyles, California Chamber of Commerce, letter dated April 20, 2006, on behalf of California Employers Coalition: California Attractions and Parks Association, California Chamber of Commerce, California Employment Law Council, California Hotel and Lodging Association, California Manufacturers and Technology Association, Construction Materials Association of California, Enterprise Rent-A-Car, Granite Construction, Inc., Lumber Association of California and Nevada

Comment #1: Unless amended to address its concerns, the California Employers Coalition opposes adoption of the proposed permanent standard. The Coalition urges the Board to address its concerns by amending the standard as detailed in its letter to the Board of April 20, 2006 in order to prevent unintended consequences, uneven compliance, and arbitrary enforcement. Labor Code section 144.6 requires that the development of standards must be based upon research, demonstrations, experiments, and such other information as may be appropriate and that whenever practicable, the standard shall be expressed in terms of objective criteria and of

the performance desired. All regulatory standards need to indicate what employers must do in order to comply and indicate a point where employers will be considered to have done enough. In addition to comments on specific proposed requirements the Coalition disputes assertions made in the Initial Statement of Reasons regarding potential Impact on Businesses. The Coalition also asks what, if any, businesses were contacted to assess the economic impact of the proposed standard. What other economic data were collected and examined regarding the economic impact on businesses, particularly those that do not have a history of heat illness. The Coalition would like the Board to provide information on who performed the economic assessment as well as a description of what size and type of small businesses were contacted and what information the businesses provided to the Board to ascertain the decision “no adverse economic impact.”

Response: The Board believes that with its proposal for the permanent standard for heat illness prevention as originally proposed and modified, in a 15-day notice for public comment, it has satisfied statutory requirements of the Labor Code and the Government Code with respect to necessity, clarity, non-duplication, and reference. With regard to the Cost Estimates of the Proposed Action included in the Initial Statement of Reasons document, the statements made therein reflect the Board’s assessment of the situation with regard to cost impact. The Cost Estimates section notes that requirements for provision of drinking water and personal protection already exist in more general form in Title 8. The Cost Estimates also contain additional discussion on the likely costs of providing shade for the preventative recovery period. For nonagricultural employers those costs may be even lower if they are able to take advantage of alternative cooling technologies as provided for by modifications to the original proposal. The proposed permanent rule does not substantially expand existing requirements for water, personal protection from hazardous exposures, and employee training and first aid, instead only tailors them specifically to prevention of heat illness. The Board has not received any specific comments on the proposal or the Cost Estimates which provide information additional or alternative to that which the Board has presented in the Cost Estimates section itself. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #2: In the interest of clarity, the phrase “in Outdoor Places of Employment” should be added at the end of the existing title of the proposed standard. The Coalition is concerned that without this important distinction the proposed title may be inappropriately applied by enforcement personnel to indoor places of employment.

Response: The Board appreciates the commenter’s suggestion for highlighting the scope and application of the proposed standard. However, the Board wishes to avoid what is likely to be a common misconception, even without the suggested change to the title, that if an employer does not have employees who work outside, or who work outside only occasionally, that they do not have to be concerned with addressing the risk of heat illness that their employees may face at work. It is clear that all California employers must be concerned with the potential risk of heat illness that may be faced by their employees. Proposed section 3395 contains additional requirements applicable to outdoor employment beyond those already existing in Title 8 that are relevant to heat illness, most notably for the Injury and Illness Prevention Program to address all

workplace hazards, requirements for provision of drinking water, and requirements for preparation for provision of emergency medical assistance. The Board believes that the existing title of the proposed permanent standard for heat illness prevention appropriately calls the attention of all employers to the problem of heat illness, not only those with outdoor places of employment. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #3: The commenters believe that the proposed Scope and Application in subsection (a) should be amended so that employers and employees have clear instruction as to when the standard triggers, and equally important, when it triggers off. The Coalition also does not believe it is necessary to identify all the other sections of Title 8 that become inapplicable because of section 3395. To address these concerns the following language is suggested for the Scope and Application:

This section applies to outdoor places of employment where there is a risk of occurrence of heat illness.

Response: The scope and application is clear in its coverage of all outdoor places of employment. See Mr. Abram’s comment #1 regarding limiting the scope where risk occurs. Regarding the reference to other Title 8 sections, see the response to Mr Abram’s comment #2. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #4: The Coalition believes that Note 1 in subsection (a) is not enforceable and should be deleted. The Coalition suggests as an alternative that the appropriate place for this Note would be DOSH’s written policy and procedure document provided to their enforcement personnel. The Coalition believes that Note 2 is not enforceable and should be deleted as it refers to every standard that DOSH develops and is a duplication of existing standards.

Response: The notes provide guidance that is intended to assist the regulated public in applying the requirements of the standard with respect to other regulatory and statutory obligations. The Division will provide this guidance to its enforcement personnel and the Board sees the value of retaining these advisory notes in the proposal so the regulated public has the same guidance as the Division. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #5: The proposed definition of “acclimatization” should be amended to avoid the implication that employers would have a constant duty to acclimatize employees every time the employee is off work for weekends, vacations, or holidays. The definition provides no information that will be helpful to employers in complying with the proposed standard. Suggested amended language for this definition is:

“Acclimatization” means the adaptation of the body to work in the heat.

Response: The language of the proposed standard is sufficiently clear and does not include or suggest a specific requirement for employers to reacclimatize employees after weekends, vacations, and holidays. The Board believes that the amended definition of “acclimatization” suggested by the commenter would not be in the best interest of employers or employees, for whom it is important to understand that the development of acclimatization that reduces the severity and frequency of occurrence of heat illness is both a temporary and gradual physiological change in the body’s adaptation to work in heat. The definition as proposed will aid employers and employees in recognizing that particularly for an employee new to work in heat, or in the event of a “heat wave,” i.e., a rapid day-over-day increase in environmental risk factors (most notably temperature or relative humidity) where all employees working are at increased risk (i.e., are not fully acclimatized), work expectations may need to be temporarily reduced, and/or reasonable measures where feasible need to be taken to reduce exposure to risk factors for heat illness (e.g., by working at night, providing additional rest breaks). Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #6: In the interest of clarity the proposed definition of heat illness should be amended to read:

“Heat Illness” means a serious medical condition resulting from the body’s inability to cope with extreme heat. Symptoms may include heat cramps, heat exhaustion, fainting, and heat stroke.

Response: Without more fully understanding the commenter’s rationale for the suggested substitution of “extreme heat” for “particular heat load” it is difficult for the Board to respond to this aspect of the comment. It is important to recognize that heat illness is not only associated with conditions of what might normally be regarded as “extreme heat.” Even moderate exertion at 70 degrees Fahrenheit can be associated with occurrence of heat illness. By contrast, the risk of heat illness at what might be regarded as “extreme heat” is greatly elevated. The Board is obligated not to suggest that the proposed standard applies only where the risk of heat illness, and even resulting serious injury or death, is “extreme.” With regard to the other aspect of the suggested change in the definition, the Board notes that “heat cramps, heat exhaustion, fainting, and heat stroke” are not symptoms of heat illness, but rather constitute various forms and degrees of the condition itself. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #7: The Coalition believes that the proposed definition of the term “Environmental risk factors for heat illness” should be modified to ensure that the definition references that the working conditions actually must increase the likelihood that heat illness will occur before work is considered a risk factor.

Response: The proposed standard’s definition of the term “Environmental risk factors for heat illness” is only related to a training requirement of subsection (e). The Board believes it is appropriate that the proposed definition related to this training requirement speak generally to the factors that can affect the risk of heat illness. The purpose of the training requirement, and

therefore the proposed definition, is for workers and supervisors to be aware of the potential risk factors that they and their employer should consider when planning and carrying out work outdoors. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #8: With regard to the proposed definition of “Personal risk factors for heat illness,” the Coalition is concerned that the inclusion of the terms “age,” “health” and “use of prescription medications” appears to imply that an employer must consider (illegally) these factors when making job assignments. For that reason the Coalition believes the definition should be amended to read, as follows, to eliminate unintended liability under laws such as the Americans with Disabilities Act, the Age Discrimination in Employment Act, and the state Fair Employment and Housing Act:

“Personal risk factors for heat illness” means individual conditions that increase susceptibility to the different types of heat illness.”

If the Board chooses to retain the originally proposed definition of “Personal Risk Factors” a statement should be inserted that employers will be considered to be in compliance with the related training requirement at (e)(1)(A) if they read the definition of this term to their employees.

Response: The proposed definition of “Personal risk factors for heat illness,” and the related training requirement of subsection (e) do not, as the commenter suggests, have any impact on the employer’s procedures regarding job assignments. The Board envisions credible training related to this term to consist of a general overview of the factors mentioned and that they may be related to risk of heat illness. While reading the standard’s definition of “Personal risk factors for heat illness” to employees is a good way to start the training session, this by itself would not be sufficient to fulfill the Board’s intent of orienting employees to personal risk factors that may increase their risk of heat illness. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #9: Given the impossibility of knowing when someone has recovered from something they are attempting to prevent, the Coalition suggests the following amended language for the proposed definition of “Preventative recovery period.”

“Preventative recuperative period” means a period of time to recuperate from the cumulative effects of the heat in order to prevent heat illness.

Response: Using the word recuperate instead of recover would not add significantly to the definition. Since the word recover is a more commonly used term, the Board declines to revise the language as suggested. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #10: The Coalition has several concerns with the proposed definition of “shade:”

1) The first and second sentences should be combined for clarity

- 2) The third sentence should be deleted because it is vague and unenforceable
- 3) The definition is problematic because it does not envision the use of permanent structures that may be available for shade, or take into account the angle of the sun at certain times of the day
- 4) The example at the end of the definition should be deleted because it is unclear and could cause confusion with respect to California Air Resources Board standards that prohibit idling of diesel engines for longer than three minutes.

The Coalition recommends the following amended language for the definition of “shade:”

“Shade” means blockage of direct sunlight by means such as canopies, umbrellas, and other temporary or permanent structures or devices. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight.

Response: The Board appreciates the commenter’s careful attention to the details of this proposed definition. The fact that “permanent structures” are not mentioned as examples of acceptable sources of shade in the proposed definition is not an indication that such structures could not satisfy the requirement for access to shade. With regard to the angle of the sun, canopies and umbrellas can be adjusted to account for the angle of the sun. Finally, with respect to the Air Resources Board standards on idling of diesel engines, the Board appreciates the commenter’s concern. However, the proposed definition does not require use of idling vehicles with air conditioning as a source of cooling, but rather refers to it only as an example of a potential alternative to shade. Therefore there is no conflict with Air Resources Board standards mentioned. Moreover, the reference in the proposed definition is to “car,” most of which are not diesel-powered. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #11: No evidence is provided in the Initial Statement of Reasons that existing Title 8 requirements for the provision of drinking water are not sufficient to communicate to employers that an adequate supply of potable water must be provided. If the proposed requirement is retained, the Coalition believes that it should be amended to avoid arbitrary and uneven enforcement. Employers cannot control how much water employees consume. Additionally the last sentence of the subsection would more appropriately be located in subsection (e) as a training requirement. Finally, the Coalition believes that the proposed language only contemplates remote locations where water must be supplied in containers, and therefore should be amended to allow for plumbed potable water. The Coalition’s suggested amendments are as follows:

(c) Provision of Water. Employees shall have access to potable drinking water meeting the requirements of Sections 1524, 3363, and 3457, as applicable. Where the supply of drinking water is not plumbed or otherwise continuous ~~Water shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. Employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water, as described in (e), shall be encouraged.~~

Response: As suggested by the last element of the comment, the Board has chosen to propose a substantially related modification to the original proposal to account for the fact that some employees in outdoor workplaces nonetheless have access to plumbed water. The proposed modification clarifies that the second sentence of subsection (c) is intended to apply only where drinking water is not plumbed or other continuous. With respect to the other requirements of proposed subsection (e) commented upon, it is not intended that this subsection require employers ensure or control how much water individual employees consume. The Board recognizes that while employers can help increase the likelihood that employees will consume sufficient quantities of water to reduce risk of heat illness, such as by making it conveniently available in the workplace and cooled to a palatable temperature, employers cannot be required to ensure consumption of specific quantities of water and proposed subsection (c) does not suggest that they should. The second sentence of proposed subsection (c) is intended to assure that sufficient quantities of water are available, either at the beginning of the work shift or through effective procedures for replenishment, so that water can serve its role as an effective measure for heat illness reduction. And the last sentence of proposed subsection (c) is intended to help ensure that employees are aware of the need to consume water frequently in the interest of reducing their risk of heat illness.

Comment #12: The Coalition believes that the language of proposed subsection (d), Access to Shade, should be amended to allow for ways and means of cooling other than shade, to provide for employees to notify the employer that they are leaving their work area so that resulting safety hazards can be addressed, and in the interest of clarity. The recommended amendments are as follows:

(d) Access to Shade. Employees suffering from heat illness or ~~believing in need of a preventative recovery~~ recuperative period to recover from the cumulative effects of heat is needed, shall be provided access to an area with shade that is ~~either~~ open to the air or provided with ventilation ~~or~~ and cooling devices for a period of no less than five minutes. Such access to shade shall be permitted at all times. Cooling measure other than shade may be provided in lieu of shade if the employer can demonstrate that these measures are at least as effective as shade in allowing employees to cool. If at all practicable, before departing the work area, the employee shall allow the employer the opportunity to take appropriate actions to address any hazards to employee or other employees. Appropriate action may include replacement by another employee or stoppage of processes or equipment.

Response: The Board has amended the original proposal to allow employers, except for those in the agriculture industry, to use cooling measures other than shade in satisfying the requirement of subsection (d), if they can demonstrate that these measures are at least as effective as shade in allowing employees to cool. With regard to adding language suggested by the commenter to require employees to notify the employer when they take a preventative recovery period, this would be inconsistent with the scope of Title 8 standards which are requirements for employers, not employees. Employers are free to develop procedures directing employees to notify supervisors if they are taking a preventative recovery period, provided such a requirement does

not interfere with the requested recovery period actually being taken by the employee. With regard to other comments on the details of the proposed language, in the absence of the commenter’s specific rationale, the Board is not in a position to respond to the other amendments suggested by the commenter to subsection (d).

Comment #13: Without a clearer definition limiting the scope of the proposed standard, the training requirements of proposed section 3395 will apply to every employee who works outdoors in California, including at ski resorts in December. Also, employers need very clear guidance on when the training requirements begin and end. To address these concerns the Coalition recommends the following amended language for subsection (e)(1):

Training shall be provided to all employees determined by the employer to be exposed to the risk of heat illness, and their supervisors, when the procedures required by this section are established, and subsequently to other employees, and their supervisors, prior to their initial assignment to a job that may result in heat illness. The training shall include:

Response: The variability and difficulty in reliably assessing the factors that could be used as triggering mechanisms mitigates against there being such a mechanism in the scope and application of the standard. The Board notes further that many employees are likely to be at risk of heat illness unrecognized by their employer, for example when working in protective clothing. Thus, the general requirement of the proposed standard for outdoor employees to receive the training of subsection (e) will contribute to a wider recognition and control of exposures to risk of heat illness. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #14: The Coalition believes that including personal risk factors in the training is essential, so employees can understand the risks and be aware of signs and symptoms of heat illnesses. However, as referred to in the comment on the definition of “Personal risk factors for heat illness,” the Coalition asks that if simply reading the standard’s definition of this term to employees would satisfy the training requirement of proposed (e)(1)(A) then instruction to employers to that effect should be included in (e)(1)(A).

Response: Reading the standard’s definition of “Personal risk factors for heat illness” to employees is a good way to start the training required by subsection (e). However, by itself this would not be sufficient to fulfill the Board’s intent with the requirement for training that orients employees to personal risk factors that may increase their risk of heat illness. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #15: The Coalition is concerned that employers are not in a position to identify, evaluate or control personal risk factors for heat illness because of medical confidentiality and other legal liability issues. Therefore, the following amendment with respect to proposed subsection (e)(1)(B) is recommended:

The employer’s procedures for identifying, evaluating, and controlling exposures to the environmental ~~and personal risk factors~~ for heat illness;

Response: The language of subsection (e)(1)(B) addressed by the comment is found in the emergency temporary standard rather than the proposal for the permanent rule. The language of the permanent rule proposal does not include reference to an employer procedure for identifying, evaluating and controlling exposures to personal risk factors for heat illness.

Comment #16: The Coalition believes that the training requirement of proposed (e)(1)(C) with respect to the importance of frequent consumption of water is appropriate. However, it is not clear what is meant by the phrase “extreme conditions of work and heat.” If the meaning of this phrase is not clarified the Coalition recommends that this subsection be amended as follows:

The importance of frequent consumption of small quantities of water, ~~up to 4 cups per hour under extreme conditions of work and heat;~~

Response: In substantially related modifications to the original proposal, the phrase “extreme conditions of heat and work” is deleted and new language is substituted to clarify the conditions for which training is to be provided on the importance of frequent consumption of water.

Comment #17: The Coalition believes that subsection (e)(1)(D) should be amended to clarify that it is only a requirement for training, and not a requirement that employers must acclimatize the worker each time heat illness risk factors are present.

Response: The Board believes the language of the proposed standard, including the title of subsection (e), Training, is sufficiently clear that it does not include or suggest a specific requirement for employers to acclimatize workers each time heat illness risk factors are present. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #18: The Coalition believes that proposed subsections (e)(1)(E), (F) and (G) are appropriate. The Coalition notes that proposed subsection (e)(1)(F) may be the appropriate location for the amendment regarding employee notice to the employer when they leave for a recuperative period, as detailed in its comment on proposed subsection (d) Access to Shade.

Response: As noted in response to comment #12 of the commenter’s suggested amendments to the language of subsection (d), the Board must decline the commenter’s suggestion for a requirement for employee notice to the employer when they leave for a preventative recovery period. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #19: The Coalition believes that proposed subsections (e)(1)(H) and (e)(1)(I) are redundant and duplicative of the provisions of subsection (e)(1)(G). As written, these two provisions are likely to conflict with an employer’s effective emergency response procedures and other training that the employer has already provided as required by other sections of Title 8.

Response: In substantially related modifications to the original proposal, amendments are proposed for subsections (e)(1)(H) and (I), but these modifications appear unlikely to affect the substance of the comment. However, the comment is insufficiently specific to respond meaningfully as no information is provided as to how the conflict suggested would manifest itself, or even if it did, if it would have a significant negative impact on employers. The Board believes that the proposed requirements of subsections (e)(1)(H) and (I), even as revised by the substantially related modifications, are so general in nature that they provide ample flexibility for the employer to tailor measures which are both effectively responsive to the requirement while being of negligible negative impact on the employer.

Comment #20: The Coalition also believes that subsection (e)(1)(I) could lead to unreasonable training requirements for those employers with employees that work at many worksites in the course of a day or week or month. The proposed language of (e)(1)(I) could be construed to require training on medical service locations several times per day or per week. For these reasons the Coalition recommends that proposed subsections (e)(1)(H) and (e)(1)(I) be deleted. If the Board retains the concept of these two subsections their provisions should be combined and amended to read as follows:

How to notify a supervisor or employer of a medical emergency.

Response: Proposed subsections (e)(1)(H) and (I) are intended to provide details to help assure that emergency medical services can be obtained even where access, particularly at nonfixed worksites, may not be easily detailed in communications with emergency response dispatchers. The Board is confident that the commenter recognizes the importance of providing employees with information on procedures for rapidly and effectively obtaining emergency medical services in the event of serious injury or illness. The Board believes that for mobile employees and crews working in areas not effectively served by the 911 emergency response system, employers have a duty to take special care to ensure that reasonable steps are taken to ensure that employees can, regardless of their location, obtain emergency assistance without the delay that can be associated with lack of familiarity with their location. Where a mobile employee or crew is working in an urban area served by the 911 system, with clearly readable street signs and addresses, the required measures are minimal and straightforward. Where a mobile crew or employee is working in a less clearly delineated location, it is incumbent upon the employer to take reasonable steps to ensure that the mobile employee or crew can rapidly contact emergency service dispatchers and effectively describe their location so that emergency responders can provide them assistance with a minimum of unnecessary delay.

Comment #21: The Coalition believes that the requirements of proposed subsections (e)(2)(A),(B), and (C) are appropriate and agree with their inclusion in this standard.

Response: The Board acknowledges the commenter's support for this aspect of the proposal.

The Board thanks Ms. Broyles for her comments and for participating in the Board's rulemaking process.

Judy Chu, California Assembly Member and Dean Florez, California State Senator along with numerous other legislative co-signatories, letter dated March 30, 2006

Comment: The commenters expressed their strong support for adoption of the proposed standard. The commenters noted the importance of adopting the standard with the subsections of the proposal addressing employee and supervisor training and education, provisions for availability of water all times, access to shade and rest period of no less than five minutes, and a statement that it is a violation of law for an employer to willfully discharge or discriminate an employee who exercises their rights under the standard.

Response: The Board acknowledges the commenters' support for the proposal and for participating in the rulemaking process.

Richard Cohen, electronic mail dated March 30, 2006

Comment #1: The scope of the standard should be based upon quantitative assessment of the level of workplace risk of heat illness, such as that suggested by the Threshold Limit Value for Heat Stress and Heat Strain of the American Conference of Governmental Industrial Hygienists.

Response: See the response to Ms. Brown et al. comment #9.

Comment #2: Workers paid on a piece-rate basis have a disincentive to request the preventative recovery period unless they are compensated for it.

Response: See the response to Ms. Brown et al's comment #6.

The Board thanks Dr. Cohen for his comments and participation in the rulemaking process.

Thomas Daly, Hilton Hotels Corporation, letter dated April 20, 2006

Comment: The scope of the proposed permanent standard should be narrowed to include only those employees who are "not provided frequent or periodic access to indoor work environments." Employees in the lodging industry typically provided frequent or periodic access to indoor work include valet parking attendants, food service wait staff, doormen, and pool attendants and lifeguards.

Response: See response to Mr. Abrams comment #1.

The Board thanks Mr. Daly for his comments and participation in the rulemaking process.

Judith Freyman, Organization Resources Counselors Worldwide, letter dated April 12, 2006

Comment: The scope of the proposed permanent standard should provide an exclusion for outdoor activity which is incidental rather than continuous, as has been proposed by the state of Washington workplace health and safety agency.

Response: See response to Mr. Abrams comment #1.

The Board thanks Ms. Freyman for her comments and participation in the rulemaking process.

Ruben Grijalva, California Department of Forestry and Fire Protection, letter dated April 6, 2006

Comment #1: A separate requirement should be established for wildland fire fighting which is limited to requiring provision of shade for the preventative recovery period only where it is feasible.

Response: The Board appreciates the comments of the Department of Forestry and Fire Protection and the difficulties it can face with preventing heat illness risk among its employees during wildland fire fighting operations. A modification is proposed to allow alternate cooling measures to be used in lieu of shade.

Comment #2: New regulatory language was suggested with regard to medical monitoring for wildland fire fighters. It was suggested that this language be added to Title 8 section 3410, Wildland Fire Fighting Requirements. The language suggested would require that, to the extent an employer conducts periodic physical examinations for employees, for those employees exposed to potentially hazardous levels of heat stress the physical examination shall include an assessment of risk factors peculiar to the employee which may affect their ability to tolerate exposure to heat stress without adverse effects, as well as a history of heat-related illnesses suffered by the employee.

Response: Amending section 3410 is beyond the scope of this rulemaking and the Board declines to expand the requirements of the proposed section 3395 to include medical monitoring. The Board does applaud the commenter for addressing heat in their medical program and sees that as a good supplement to the minimum protections of section 3395. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

The Board thanks Mr. Grijalva for his comments and participation in the rulemaking process.

William Jackson, Granite Construction, Inc., letter dated April 17, 2006

Comment #1: There is no evidence in the rulemaking record that the proposed permanent standard is necessary or would have been adequate to address, or would have contributed to preventing or mitigating the serious heat illness cases reported to the Division in 2005. The Division has presented no evidence that the existing standards in Title 8 relevant to prevention of heat illness were or are inadequate to address the hazard in California. Without more than

anecdotal information there is no evidence that this proposed standard is necessary. Is the rate of occupational heat illness as great as that of being struck by a motor vehicle or assaulted in the workplace?

Response: The commenter is correct when he suggests that the apparent rate of occurrence of serious incidents of occupational heat illness, per 100,000 employees, is not as great as motor vehicle incidents or assaults in the workplace. However, the rate of occurrence of heat illness is not dissimilar from that of other serious hazards with specific Title 8 standards such as electrocution and fire/explosion hazards. Moreover, part of what motivates the Board to address prevention of heat illness is the relative simplicity of its prevention, or at least reduction of its occurrence: adequate provision and consumption of potable drinking water, provision of shade, training of employees and supervisors in prevention measures, heat illness symptom recognition and response procedures. When these measures contained in the proposed permanent standard are compared with the uncertainty, complexity, and far-reaching impacts of attempting to address occupational risks of workplace assaults and motor vehicle accidents, the Board is confident that its efforts to address reduction of occurrence of heat illness are appropriate, particularly in light of the severely elevated level of serious heat illness events reported to the Division in 2005.

Comment #2: The Division's new proposal is especially onerous when compared to the emergency standard because the scope and application have been expanded to all outdoor places of employment in California year round, whether or not there is any risk of heat illness. As written it appears that employers with outdoor operations would be obligated, at a minimum, to provide two gallons of water per employee per day, access to shade, and extensive training to all employees and all supervisors whether or not there was any risk of heat illness.

Response: The commenter is correct that in theory an employer might be required to undertake the heat illness prevention measures detailed in the proposed permanent standard even when the apparent risk was low. However, the Board has determined that the variability and difficulty in reliably assessing the factors that could be used as triggering mechanisms mitigates against their being such a mechanism in the standard. Moreover, it is important to recognize the commenter's specific concerns, i.e., the proposed requirement to provide specific quantities of drinking water, and access to shade, even when the risk of heat illness may be very low. The proposed standard does not require that an employer have immediately on hand two gallons of drinking water for every employee at all times, but rather only that they have the capability to provide that quantity through replenishment should employees be needing to consume that much in order to avoid heat illness. Similarly, where risk of heat illness is low, it is not reasonable to assume that employees are likely to be requesting access to a preventative recovery period with any degree of frequency, though the employer would remain obligated to have the capability to provide access to shade or other cooling devices (for nonagricultural employers) as provided for in the modifications made to the proposal. Thus, the Board believes that the scope and application of the proposed permanent standard is reasonably appropriate and necessary to address the risk of heat illness.

Comment #3: It is not necessary to identify other sections of Title 8 relevant to heat illness prevention that do not become inapplicable because of section 3395. Also, Title 8 sections

1230(a) and 8420 apply to caissons and tunnels respectively, which are not outdoor workplaces and so would not be covered by the proposed permanent standard.

Response: The two Title 8 sections applying primarily to underground operations would also apply to such work done outdoors associated with those operations. Also, see response to Mr. Abrams comment #2.

Comment #4: The two notes associated with proposed section 3395(a) do not have any regulatory effect nor do they provide any necessary information to the regulated community.

Response: See response to Ms. Broyles comment #4.

Comment #5: The proposed definition of “acclimatization” refers only to the related training requirement of subsection (e). The second sentence in the proposed definition is a vague statement about when acclimatization might “peak” in most people. This sentence does not add clarity to the standard and is unnecessary. If the Board believes that because employers do not understand the word or do not have access to a dictionary, a definition of “acclimatization” is necessary, a much simpler definition could be adopted. For instance, “Acclimatization means to become accustomed to a new climate or environment, or help somebody become accustomed to it” might be sufficient.

Response: Particularly in light of the findings of the additional research on the serious heat illness cases in 2005 presented at the Board’s hearing on this proposal on April 20, 2006, it is important that the proposed standard attempt to address the difficult problem of acclimatization, or more precisely the frequent lack or incompleteness thereof, which can be a significant factor in risk of heat illness. The research on the 2005 cases found that almost 50 percent of the roughly 25 serious heat illness cases reported occurred on the employee’s first day of work, and almost 80 percent occurred within the first four days of work. This is strong evidence of the importance of acclimatization in heat illness prevention and, in its absence, of a need for increased employer vigilance regarding the early symptoms of heat illness and effective implementation of hazard control measures such as water consumption, rest breaks in cool areas, etc. The second sentence of the definition is important to help employers and employees understand that the development of acclimatization that reduces the severity and frequency of heat illness is a gradual process. The definition as proposed will aid employers and employees in recognizing that particularly for an employee new to work in heat, or in the event of a “heat wave,” i.e., a rapid day-over-day increase in environmental risk factors (most notably temperature or relative humidity) where all employees working are at increased risk (i.e., are not fully acclimatized), work expectations may need to be temporarily reduced, and/or other effective measures need to be taken to reduce exposure to risk factors for heat illness (e.g., by working at night, providing additional rest breaks). The commenter’s proposed amended definition of “acclimatization,” while attractive in its simplicity, fails to capture the essence of the term with respect to safety, that is a physiological adaptation of the body which not only may provide a sense of greater comfort or acceptance of heat, but also reduces the likelihood and severity of the body overheating resulting from not only exposure to heat alone, but exposure to

heat combined with physical exertion. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #6: Given the expanded scope of the proposed permanent standard versus the emergency temporary standard, the proposed definition of “Environmental risk factors for heat illness” is no longer necessary. If the standard applies to all outdoor places of employment then a definition of this term would only be necessary to provide employers with the information necessary to train employees and supervisors. The proposed definition does not make the standard clearer. It does not inform employers or employees when heat illnesses will or will not occur.

Response: The commenter is correct that the proposed definition of “Environmental risk factors for heat illness” does not inform employers or employees when heat illnesses will or will not occur. Much of the difficulty encountered by the Division and the Board in developing a standard for heat illness prevention results from the fact that heat stress and the actual illness that can result from it is often, though not always, the result of a multitude of frequently changing and difficult to measure risk factors, both environmental and personal as suggested by the definitions in the proposed standard. In light of this, the Board believes that retaining the proposed definition of “Environmental risk factors for heat illness” is necessary to clarify what is required for the training element in subsection (e) related to this definition.

Comment #7: The proposed definition of the term “Personal risk factor for heat illness” is vague and speculative. For instance, it does not identify how an employee’s age, degree of acclimatization or health would increase their risk of illness. Has the Board identified how much alcohol or caffeine consumption employers should communicate to their employees is too much? Does the Board intend employers to collect and communicate the same information about the effects of prescription medicines that is provided by the drug’s manufacturer or prescribing physicians. If the Board believes that a definition of “Personal risk factors for heat illness” is necessary then the definition should provide enough clarity for the regulated community to use to satisfy the Board’s intent in subsection (e).

Response: The Board recognizes that by necessity the definition of “Personal risk factors for heat illness” will be at best suggestive of the major personal risk factors which can bear on an individual’s risk of developing heat illness at a particular place and time. The Board believes that the proposed definition appropriately captures the most common major, endogenous personal factors (age, degree of acclimatization, and general health) and exogenous personal factors (water consumption, alcohol consumption, caffeine consumption, and use of prescription medications) which employees should be informed can affect their risk of developing heat illness. The Board believes that the definition does provide sufficient clarity to enable employers to conduct the related training required in proposed subsection (e). Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #8: The proposed definition of “preventative recovery period” is not objective enough to inform the user how long the period is or how to identify when an employee is recovered. As

proposed, this period could be as long as the employee continued to “believe” preventative recovery was necessary.

Response: Due to the complexity of environmental and personal risk factors, a recovery period may vary in time as long as it is a minimum of 5 minutes as specified by subsection (d). Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #9: The proposed definition of the term “shade” is unclear as to how much shade is required. It is possible that while “objects in the shade do not cast shadows” the area in the shade might still be too hot to “allow the body to cool.” There are some times of the day when the angle of the sun above the horizon may prevent blocking of direct sunlight in a manner that prevents shadows. In fact, the use of the suggested methods of providing shade “canopies, umbrellas, and other temporary structures” might not prevent shadows or allow a body to cool.

Response: The definition is sufficiently clear and provides guidance on the issue raised by the commenter in that it already indicates that blocking the sun is not sufficient, such as in a car without air conditioning. Canopies and umbrellas can also be adjusted to account for the angle of the sun. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #10: If the Board’s intent is to provide a mechanism “that allows the body to cool,” other technologies like fans and misting devices should be allowed.

Response: The Board agrees and has modified the proposal to allow such devices for nonagricultural employees.

Comment #11: The last sentence of the proposed definition of shade seems to recommend the use of a motor vehicle with air conditioning as an alternative for providing shade. This may not be appropriate for the construction industry where in order for the air conditioning in the vehicle to maintain an inside temperature that would “allow the body to cool” the vehicle would always have to be left running. Many vehicles in construction are diesel powered, and California Air Resources Board standards in some circumstances prohibit idling of such vehicles.

Response: See the response to Ms. Broyles comment #10.

Comment #12: The proposed definition of shade should be amended to provide an exception for the situation where canopies, umbrellas, or other temporary structures are impracticable.

Response: The Board believes that it is not necessary to provide the exception requested in that those are just examples and the employer is free to use other structures or devices that may be more appropriate. As modified, the proposal will also allow for nonagricultural employers to use cooling measures other than shade if the employer can demonstrate that these measures are at least as effective as shade in allowing employees to cool. Thus the original proposal has been modified to allow, other than agricultural employers, the option of using cooling measures other

than shade if the employer can demonstrate that these measures are at least as effective as shade in allowing employees to cool.

Comment: #13: There is no evidence of necessity for requirements for provision of drinking water beyond existing standards already found in Title 8. The memorandum to Acting Division Chief Len Welsh, dated February 17, 2006, from Janice C. Prudhomme and Amalia Neidhardt makes it clear that availability of water was not a factor in any of the 25 heat related illness cases investigated between May and November 2005.

Response: The memorandum to which the commenter refers does state that potable water was present in 100 percent of the serious heat related incidents reported to the Division in 2005. However, evidence, limited to witness statements obtained by Division enforcement personnel to the effect that water was “present” at the worksite where the incidents occurred, does not establish an absence of necessity for the requirements of the proposed standard related to drinking water. Unfortunately, worksite conditions in heat illness case investigations, including water availability, are generally not observed directly by Division personnel, but only detailed by observers, generally several days after the incident has occurred. Also, beyond what the commenter indicates, the memorandum referenced by the commenter goes on to state that “in 78 percent of the cases, the medical evidence supported inadequate fluid consumption (i.e. dehydration).” In light of these latter findings, and the severely elevated number of serious heat illness cases reported to the Division in 2005, the Board is obligated to attempt to address the apparent need for a greater effort on the part of employers to ensure that sufficient quantities of water are continually available to employees to drink, and that measures are taken to encourage employees to consume water when the risk of heat illness is elevated. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #14: The purpose of the last sentence of proposed subsection (c) is unclear and should be deleted. Must employers document that they have “encouraged” frequent drinking of water, and how frequently must they do so.

Response: The Board believes that important information is provided to employers and employees by highlighting with the last sentence of subsection (c) the requirement of subsection (e)(1)(C) for training employees and supervisors on the importance of consuming small quantities of water frequently under conditions of heat in work. The proposed language of subsection (c) does not constitute a requirement for specific documentation of each instance of employer encouragement of employees to frequently drink water during hazardous conditions of work in heat. However, as modified, the proposal does require that procedures for complying with the requirements of the standard referred to at proposed (e)(1)(B) must be in writing and available to employees and representatives of the Division upon request. Thus, while failure to document every instance of encouragement of water consumption would not be expected to constitute a violation of the standard, employers would be expected to have written documentation of the procedures in place to ensure that employees are so encouraged. Credible documentation of actual encouragement of water consumption during periods of elevated heat illness risk could of course serve as evidence of effective implementation of the required procedures and serve the employer’s interest of demonstrating compliance with the standard.

Comment # 15: As written, proposed subsection (d) appears to require that regardless of environmental conditions, employers are required to make sure that access to shade is permitted at all times. If this is the Board’s intent, the proposed standard would be much clearer to simply require that shade be provided at every outdoor place of employment.

Response: The substance of this comment is addressed by the response to comment #2 by Mr. Jackson on the expansion of the proposed standard’s scope and application beyond that found in the emergency temporary standard.

Comment #16: One of the two conditions that would require an employer to provide access to shade is when an employee is suffering from heat illness. If an employee is already suffering from a heat illness, there is probably a medical emergency requiring much more than access to shade. This part of the proposed standard should be amended so that it is clear that employers are not encouraged to provide shade when a medical response is more appropriate or necessary.

Response: In cases where a medical response is necessary, providing shade and cooling is still the recommended practice before and during those response efforts. So it is very important that shade be available for those situations along with providing a preventive recovery period. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #17: The second trigger that would require an employer to provide shade is when an employee believes he or she needs a “preventative” recovery period. It is not clear what objective criteria should be used by employees and employers to establish a “belief” that a preventative recovery period is required. Without such objective criteria, it may be impossible for employers to rebut an employee’s contention that a recovery period is necessary. No evidence is provided to support the contention in the proposed standard that five minutes, or more, is necessary for an employee to recover from the “belief” that a recovery period is needed. It is not clear how employers will determine when an employee has recovered. To avoid potentially unsafe conditions associated with employees leaving to take a preventative recovery period, the proposed standard should be amended to address under what conditions and after what notification to the employer an employee could exercise his or her “belief that a preventative recovery period is needed.”

Response: With adequate training both the employee and their supervisors should be able to recognize when such recovery periods are necessary. Hopefully, the employer encourages rather than rebuts the employee requests. However, should the employer suspect an employee is not appropriately requesting the necessary amount of time, such situations would likely be handled in a similar manner as an employee excessively requesting time for other necessities like using the toilet or getting a drink of water. Also, see the response to Mr. Bernard’s comment #1 regarding the 5 minutes being a minimum amount of time. In regards to the employee’s responsibility to notify the employer before taking a preventative recovery period, see response to Ms. Broyles’ comment #12, and Ms. Moorehouse’s comment #15. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #18: It is not clear what is meant by “extreme conditions of heat and work” in proposed subsection (e)(1)(C). It is unclear from the proposed standard if both of these undefined conditions would have to occur simultaneously to make the frequent consumption of small amounts of water necessary.

Response: In substantially related modifications to the original proposal, the phrase “extreme conditions of heat and work” is deleted and new language substituted. The new language also employs the word “and” in the amended language, and as with the originally proposed language, the intent is that required training on the importance of frequent consumption of water focus on those circumstances when both conditions are occurring simultaneously.

Comment #19: Proposed subsections (e)(1)(H) and (e)(1)(I) should be combined and amended to read “How to notify the employer of a medical emergency.” As written these two provisions may be in conflict with an employer’s effective response procedures and other training the employer may have already provided.

Response: See response to Ms. Broyles’ comment #19.

Comment #20: Under the requirements of proposed subsections (e)(1)(H) and (e)(1)(I) an employer whose employees worked at a different location every day or more than one workplace in a single day would be required to provide the training detailed to every employee every day or even several times a day. This poses an insurmountable compliance dilemma. The proposal also fails to take into consideration the potential language barrier between employees trying to communicate “precise directions” and emergency dispatchers.

Response: See response to Ms. Broyles’ comment #20.

Comment #21: In the Initial Statement of Reasons under the title Reasonable Alternatives That Would Lessen Adverse Economic Impact on Small Business, the Board states that “No reasonable alternatives were identified by the Board...would lessen the impact on small businesses.” It is not stated how this conclusion was reached, or if the Board determined that the alternatives recommended by the regulated community during the advisory committee meetings were unreasonable.

Response: As with all rulemaking proposals, the Board reviewed the recommendations of the public, staff, recognized experts and in this case the advisory committee participants before coming to that conclusion.

Comment #22: In the Cost Estimates of Proposed Action the Board speculates, without any identified facts, that any additional costs to state agencies, private persons or businesses will be offset by increased productivity, improvement of employee health and saving lives. On what evidence does the Board base this assertion? If every employer with an outdoor place of employment in California must provide two gallons of water per employee per day, access to shade and extensive training to all employees and all supervisors whether or not there was any

history of heat illness, it is inappropriate to assume, absent facts, that the costs associated with those requirements would be offset by any savings. The Effect of Small Businesses has the same flawed assumption, that “no economic impact is anticipated.” If the Board has not quantified the costs associated with compliance it is impossible, except by speculation, to determine that there will be no economic impact on businesses that have had no history of heat illness in their workforces.

Response: See the response to Ms. Broyles’ comment #1.

Comment #23: The proposed permanent standard is so unclearly written that employers may have to rely on the Administrative Law Judges of the Cal/OSHA Appeals Board staff to adjudicate each citation issued by the Division for violations. The commenter also provided a copy of an earlier comment letter dated August 10, 2005 he sent to the Board when it first adopted the emergency standard.

Response: The proposal as modified is clearly written and will be easy for the regulated public and the Division to understand and apply. As with any Title 8 standard the Appeals Board will continue to serve as an administrative remedy for situations where an employer feels the Division has inappropriately applied the standard. The August 10, 2005, comment letter was specific to the emergency proposal and therefore the Board focused on the similar and more specific comments provided in his April 20, 2006 letter.

The Board thanks Mr. Jackson for his comments and participation in the rulemaking process.

Anne Katten and Martha Guzman, California Rural Legal Assistance Foundation, and Georgina Mendoza, California Rural Legal Assistance, Inc., letter dated April 20, 2006

Comment #1: A definition of "outdoor places of employment" should be added to the proposed permanent rule and should include nominally outdoor places of employment such as packing sheds. The language suggested is:

"Outdoor work area" includes 1) work areas which do not have a roof and four enclosed sides and 2) temporary or partial structures such as packing sheds which are hotter than the external environment because of limited air circulation or because the structure increases or does not reduce the net effects of environmental risk factors that exist immediately outside.

Response: The proposed standard applies to outdoor places of employment, which is where occupational heat illness most often occurs. Indoor workplaces generally block direct sunlight and/or provide ventilation which reduces the environmental risk factors for heat illness. The Board recognizes that packing sheds and partial or temporary structures, such as tents, lean-tos, and structures with one or more open sides, can be either indoor or outdoor workplaces depending on the circumstances. In many cases these structures may actually be hotter than the environment outside of them because of heating by the sun and conditions inside like limited air circulation and/or lack of insulation. The Board believes that it is clear the standard is intended

to protect employees from heat illness resulting from exposure to outdoor environmental risk factors, and therefore temporary or partial structures that do not significantly reduce the net effect of the environmental risk factors that exist immediately outside should be considered outdoor workplaces. The Board appreciates the commenter's suggestion but believes it is not necessary to add a definition of "outdoor places of employment".

Comment #2: Shade should be required to be made available for all rest and meal periods, except for road work or other construction where provision of shade creates a hazard.

Response: The Board reviewed the comments received at the September and November, 2005 heat illness advisory meetings regarding feasibility of providing shade for all rest periods at outdoor places of employment. Construction, general industry, and agricultural employer representatives objected to extending the requirement for shade to all rest and meal periods. They asserted that it would be burdensome and/or unfeasible to erect shade structures that would accommodate all employees at one time or to stagger break/meal periods. Furthermore, the standard would need to include a trigger, based on environmental risk factors, to specify when shade for all rest and meal periods is required so that employers are not required to erect shade structures when they were not necessary. The advisory group did not reach a consensus on a trigger. The Board recognizes the benefits of providing shaded rest and break areas, and encourages employers to provide shade whenever it is reasonable to do so. However, the Board believes it is not practical to require shade for all rest and meal periods.

Comment #3: It is essential to add a requirement for employers to document procedures for complying with this standard. Otherwise accountability of employers and enforceability of the standard will be inadequate. Existing emergency medical care and first aid standards for agriculture and general industry will not prevent delays and mistakes in emergency medical response, because they do not require written plans and only require advance planning for emergency medical response to remote or isolated locations. To address this deficiency, site-specific procedures for responding to heat illness, including emergency response procedures and location of shade must be documented.

Response: The Board has responded to this comment with the addition of a new proposed subsection (e)(3) which requires employers to develop in writing for training the procedures required in subsection (e)(1) for complying with the proposed standard generally, and for training on emergency response in particular.

Comment #4: Giving the worker responsibility to ask for an extra break from work does not seem realistic, particularly in agriculture. Inevitably, workers will risk their health and suffer from heat related illness rather than put their employment in jeopardy. Extra scheduled breaks during extreme heat are a better solution and we have previously recommended several versions of possible language to the Board to consider. At a minimum, the standard must specify that employers must provide adequate recovery periods and to determine adequate recovery periods, the employer shall at least evaluate temperature, humidity, exertion level of work, and length of workday and assume that direct sun exposure adds 15 degrees to the heat index.

Response: See the responses to Mr. Bernard comment #1 and Ms. Brown et al. comment #6.

Comment #5: During the heat stress standard advisory meetings employer representatives stressed that on particularly hot days employers would of course schedule work to start early and end early. However, the Division’s investigations of heat illness cases in 2005 reveal that the workday extended to 4 or 5 pm for half of the agricultural incidents and a third of construction incidents attributed to heat exposure. In light of this observation, a requirement to schedule all non-essential daylight work to end by 2 p.m., or if possible noon, seems necessary.

Response: The Board appreciates the commenter’s concern with respect to the risk of working outdoors at extreme temperatures and for long periods of time and agrees that employers may need to take steps beyond those specifically stated in proposed section 3395. The Board has chosen not to include in the proposed permanent standard a duration or time-of-day limitation on outdoor work as suggested by the commenter because, while attractive in its simplicity, it would constitute an overly simplified response to a complex problem and need. There are times when, for a variety of reasons, work must be conducted during temperature extremes. However, there are means and methods other than limiting the duration or time of such work by which employers can address the risk posed to employees. For example, the duration, the level of exertion of work, and work/rest intervals can be controlled by the employer to address the risk of heat illness, consistent with the recommendations of the American Conference of Governmental Industrial Hygienists or other generally recognized authoritative source. Also, personal cooling devices are commercially available that can be used in some work applications. Additional measures such as these are not specifically required in the proposed standard which is intended to include only minimum requirements applicable to all outdoor work situations where risk of heat illness may exist. However, all employers, even those covered by section 3395, are required to take whatever steps are necessary through their Injury and Illness Prevention Program to address the risk of heat illness actually faced by their employees.

Comment #6: Language should be added to the proposed standard to provide that employees working on a piece-rate basis be compensated for required rest time by being paid their average piece-rate wage for each rest and recovery period taken during each pay period, or portion of a pay period, in which they were employed on a piece rate basis.

Response: The concept of piece rate is not unique to this standard. Other Title 8 standards that allow employees to take breaks for a variety of reasons, from using the toilet to obtaining protective equipment, would be similarly affected. Therefore, the Board does not see a need to specify compensation or otherwise address piece rate or other working conditions in this proposal.

Comment #7: In light of the high percentage of the 2005 cases of heat illness found to have been associated with the first day on the job, and the first four days on the job, the standard needs to include a requirement for employers to increase vigilance over employees' consumption of water and response to work in heat if they are not acclimatized or their acclimatization status is unknown. Regulatory language is proposed as a note to define the environmental conditions under which such increased vigilance would be specifically required.

Response: The standard specifies that training for employees and supervisors must include the importance of acclimatization and drinking plenty of water. The standard also specifies that the frequent drinking of water shall be encouraged. The Board recognizes it is also important, as suggested by the commenter, to exercise additional caution with employees when there is a heat wave; however, the Board believes the information provided in the note that the commenter proposes for inclusion in the standard should be part of the information the employer provides as part of the required training regarding acclimatization. The Board thanks the commenter for the suggestion but does not believe the note is necessary because it only serves to provide information that is already required to be provided.

Comment #8: During periods of extreme heat, work vehicles used for extended travel should be required to have working air conditioning systems.

Response: The proposed standard would apply to non-air-conditioned work vehicles used for extended travel during periods of extreme heat. Employees traveling in these conditions are entitled to all of the protections provided by the standard including access to shade. The standard specifically states, "Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning." The Board is not aware of any scientific evidence that passengers riding in a work vehicle, in compliance with motor vehicle and other applicable standards, are exposed to a greater risk of heat illness than workers at other outdoor workplaces, which are not required to be air-conditioned. The Board believes the issues related to the necessity and feasibility of a proposed requirement for air-conditioned vehicles were not adequately vetted during this rulemaking. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #9: Regulatory language is suggested to address work scheduling during extremely hot weather to provide that non-urgent outdoor work shall be completed prior to 2 p.m. when work is conducted during daylight hours at times when conditions meet the criteria of "Danger" or "Extreme Danger" as defined by the National Oceanic and Atmospheric Administration Heat Index system.

Response: The Board recognizes that scheduling outdoor work to avoid the hottest time of the day is an effective means of reducing the risk of heat illness. During the advisory group meetings held in September and November 2005, several management representatives from the agriculture and construction industry reported that when the weather is extremely hot they schedule outdoor work to avoid the mid-day heat. The commenter proposes that the trigger for a mandatory work schedule rely on the National Weather Service Heat Index. The management representative at the advisory group meetings objected to relying on the Heat Stress Index and other similar guidelines, because the measurements and guidelines were too burdensome and/or unreliable. The Board anticipates the term "non-urgent" has a different meaning for different stakeholders, and believes it would require clarification. Furthermore, the Board believes there are many issues related to the proposed requirement for mandatory work schedules, which would

require additional stakeholder input. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #10: Language for a requirement related to acclimatization is recommended which would require that if employees are not acclimatized to work in heat, or their acclimatization status is unknown, the employer shall implement procedures to ensure the frequent consumption of water and at least one of the following procedures: use of personal cooling devices; monitoring of recovery pulse rate; periodic reductions in the level and duration of physical exertion.

Response: Many employers have information available to them about their employees' degree of acclimatization, because they know where their regular employees have been working and can ask new employees about where they have been working and what kind of work they have been doing recently. The standard requires that all employees and supervisors receive training on the importance of acclimatization and drinking plenty of water. The standard also requires that the frequent drinking of water shall be encouraged. The Board recognizes that acclimatization is an important means of reducing an employee's risk of developing heat illness when environmental risk factors for heat illness are present; however the commenter's proposal would require employer's to implement procedures to protect unacclimated workers even when the environmental risk factors are not present. Furthermore, the Board believes the suggested procedures do not provide sufficient instruction to employers to be effective. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

The Board thanks Ms. Katten et al for their comments and participation in the rulemaking process.

Dana Lahargoue, Construction Employers' Association, letter dated April 17, 2006

Comment: Language should be added to the proposed standard to detail responsibilities of different employers and the controlling employer on multi-employer job sites. It would help the regulated community if the responsibilities of the controlling employer were clearly stated, and were limited to, informing subcontractors and other prime contractors of their responsibilities to comply with the standard and informing them of the specific address of the site for emergency vehicle response and for establishing and maintaining emergency response locations on the job site. Recently adopted standards, for example Section 1710, Steel Erection, have included language that not only defined the controlling contractor but also specified their responsibilities with respect to the standard.

Response: The issue of multi-employer obligations apply to all Title 8 standards and there are no unique situations in this proposal that need any further delineation of the role of controlling versus the exposing employer. The commenter should refer to sections 336.10 and 336.11 for how multi-employer obligations would apply to Title 8 standards such as this proposal.

The Board thanks Ms. Lahargoue for her comments and participation in the rulemaking process.

**Carlos Maldonado, California Rural Legal Assistance, Inc., letter received (undated)
March 16, 2006**

Comment #1: Shade should be required to be made available for all rest and meal periods, except for road work or other construction where the provision of shade creates a hazard. He also suggests increasing the recovery period from 5 to 10 minutes.

Response: See the response Ms. Katten et al comment #2 with regard to shade for all rest and meal periods. See the response to Mr. Bernard's comment #1 regarding a longer recovery period.

Comment #2: Amended language is suggested for a new subsection (g), Documentation, requiring employer procedures for complying with the standard to be documented. Additionally, amended language is suggested for this new subsection to require site specific procedures for responding to heat illness, including emergency procedures and location of shade.

Response: The Board recognizes the need for written procedures and is amending the proposal to add a new subsection (e)(3) specifying that the employer's procedures required by subsections (e)(1)(B), (G), (H), and (I) shall be in writing and shall be made available to employees and to representatives of the Division upon request. These employer procedures as amended in the 15-day notice, include: 1) procedures for complying with the requirements of this standard, 2) procedures of responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary, 3) procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider, and 4) procedures for ensuring that, in the event of an emergency, clear and precise directions to the worksite can and will be provided as needed to emergency responders. The Board believes these changes incorporate all of the changes recommended in the comment.

Comment #3: Language for a requirement related to acclimatization is recommended which would require that if employees are not acclimatized to work in heat, or their acclimatization status is unknown, the employer shall implement procedures to ensure the frequent consumption of water and at least one of the following procedures: use of personal cooling devices; monitoring of recovery pulse rate; and periodic reductions in the level and duration of physical exertion.

Response: See the response to Ms. Katten et al comment #7.

The Board thanks Mr. Maldonado for his comments and participation in the rulemaking process.

Nancy Moorhouse, Teichert Construction letter dated April 10, 2006

Comment #1: The Division has presented little substantial evidence that the existing standards addressing heat illness (e.g. Title 8 Sections 3203, 1509, 1524, 3364, 3363) were or are

inadequate to address the hazard of heat illness in California work places. Section 3203 currently requires employers to establish an Injury and Illness Prevention Program to identify and evaluate workplace hazards and provide training and instruction. There is no reason to believe that having the language proposed in Section 3395 would mitigate or prevent heat illness.

Response: Unfortunately with the number of confirmed serious heat-related illness cases reported to the Division in 2005, the Board must attempt to address the problem through a new standard. The Board believes there is ample evidence that the requirements contained in the proposed permanent standard for heat illness prevention are well-recognized by respected professionals and organizations as effective measures in reducing risk of heat illness. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #2: The permanent rule proposal is onerous when compared to the emergency standard because the scope and application have been expanded to all outdoor places of employment in California year round, whether or not there is any risk of heat illness. It is not clear how are employers to determine which outdoor places of employment, and under what environmental conditions, this proposed standard applies.

Response: See the response to Mr. Jackson’s comment #2.

Comment #3: The references to other sections of Title 8 that can be applicable to prevention of heat illness should be deleted as they do not add any substantive requirement. Title 8 sections 1230(a) and 8420 apply to caissons and tunnels respectively, which are not outdoor workplaces and so would not be covered by the proposed permanent standard.

Response: See the response to Mr. Jackson’s comment #3.

Comment #4: The two notes associated with proposed section 3395(a) do not have any regulatory effect nor do they provide any necessary information to the regulated community.

Response: See the response to Ms. Broyles’ comment #4.

Comment #5: The proposed definition of “acclimatization” is vague and unnecessary as it does not add any clarity to the requirements of the proposed standard. The following amended language is suggested:

Acclimatization means to become accustomed to a new environment or climate.

Response: See the response to Mr. Jackson’s comment #5.

Comment #6: The definition of “environmental risk factors for heat illness” needs to be explicit in setting compliance expectations for employers. The current vagueness does not adequately address what combination of factors will cause or prevent heat illness. The proposed definition

does not make the standard clear.

Response: See the response to Mr. Jackson’s comment #6.

Comment #7: The definition of “personal risk factors for heat illness” is vague and speculative. More clarity in the definition needs to be provided for the employer to make use of it to satisfy the training requirement in subsection (e).

Response: See the response to Mr. Jackson’s comment #7.

Comment #8: The proposed definition of “preventative recovery period” is not sufficiently objective as to how long the period is or how to identify when an employee is recovered.

Response: See the response to Mr. Jackson’s comment #8.

Comment #9: The proposed definition of the term “shade” does not provide sufficient information about how much shade is required. At times shade may not be sufficient to “allow the body to cool.” In addition there are times of the day when the angle of the sun above the horizon would prevent blocking direct sunlight in a manner that prevents shadows.

Response: See the response to Mr. Jackson’s comment #9.

Comment #10: Other means of cooling should be allowed as alternatives to shade such as fans and/or misting systems.

Response: The Board agrees and has modified the proposal.

Comment #11: The definition of shade should be amended to provide an exception for situations where canopies, umbrellas, or other temporary structures are impracticable.

Response: See the response to Mr. Jackson’s comment #12.

Comment #12: The last sentence of the proposed definition of “Shade” should be amended so that it does not potentially conflict with standards of the California Air Resources Board and local air pollution control districts which prohibit idling of diesel-powered vehicles.

Response: See the response to Ms. Broyles’ comment #10.

Comment #13: The last sentence of proposed subsection (c) regarding encouragement of drinking of water is vague and unenforceable and should be deleted.

Response: See the response to Mr. Jackson’s comment #14.

Comment #14: Subsection (d) should be rewritten so that employers are not encouraged to provide shade when a medical response is more appropriate or necessary when an employee is

suffering from heat illness. In addition, it is unclear what objective criteria will be placed on the employer to verify that an employee needs a preventative recovery period.

Response: See the response to Mr. Jackson’s comments #2 and #16.

Comment #15: Proposed subsection (d) should be amended to address under what conditions notification to the employer by the employee would be required when they are going to take a preventative recovery period. Allowing the employee to decide to take the break without notification will cause serious consequences to the motoring public and other members of the construction crew.

Response: The proposal does not prohibit the employer from being notified when an employee believes they need to seek shade. In some situations such notice would be necessary to ensure that the shaded area is set up and ready for the employee to use. As with other Title 8 standards that allow employees to stop their job duties, such as to use the toilet or obtain protective equipment, it is not necessary to specify that an employer be notified. As with those standards, employers may require reasonable notice to ensure the safe operation of the job while the employee is gone. Also, see the response to Ms. Broyle’s comment #12.

Comment #16: The term “under extreme conditions of work and heat” in proposed subsection (e)(1)(C) is vague and needs to be defined and clarified.

Response: The Board agrees and has modified the proposal.

Comment #17: The proposed requirements of subsections (e)(1)(H) and (I) may be in conflict with an employer’s existing procedures for emergency medical response procedures and should be combined and amended to read:

How to notify the employer of a medical emergency

Response: See the response to Ms. Broyles’ comment #19.

Comment #18: As written subsection (e)(1)(I) would require employers whose employees work at different jobs every day to provide this training to all employees every day. In some situations in construction, there is no “precise directions” to the jobsite as it is under construction (e.g. a new community being designed and built).

Response: See the response to Ms. Broyles’ comment #20.

The Board thanks Ms. Morehouse for her comments and participation in the rulemaking process.

John Robinson, California Attractions and Parks Association letter dated April 14, 2006

Comment #1: Proposed subsection (c) contemplates remote locations, like those of a farm and construction workers, where water must be supplied in containers. We ask that the proposal be

amended to explicitly allow for plumbed water (e.g. drinking fountains) as a means of compliance with this subsection.

Response: The Board agrees and has modified the proposal.

Comment #2: The subsection should be amended to require that an employee taking a preventative recovery period, if practicable, first notify the employer so that they can make provision for coverage of the work station for safety purposes.

Response: See the response to Ms. Morehouse's comment #15.

The Board thanks Mr. Robinson for his comments and participation in the rulemaking process.

Mark Schenker, UC Davis letter dated April 10, 2006

Comment #1: Five minutes is too short for the preventative recovery period given the variability of field conditions and individuals' own level of fitness and health. It is not acceptable medical practice, or for the standard, to require someone suffering from heat illness to return to work in the sun after five minutes. The standard does not consider the range of environmental conditions, nor the seriousness of the individual's medical condition.

Response: The purpose of the recovery period is prevention of heat illness by reducing heat stress on the employee. Since people produce more metabolic heat while working, resting reduces this source of heat, and also reduces the heart rate. Water should be available in the recovery area to prevent further dehydration and enhance recovery. The employer is required to provide access to shade for those employees who believe they need a preventive recovery period from the effects of the heat and anyone who actually exhibit indications of heat illness. Access to the shade must be permitted at all times, and the employee must be permitted to remain in the shade for a period of at least five minutes. The importance of prevention cannot be overstated. When employees wait until actual symptoms appear before seeking shade and recovery, they are at significant risk of developing serious heat illness and the purpose of the standard is defeated.

The Board recognizes that the preventive recovery period is not a substitute for medical treatment. If an employee has any symptoms of heat illness, first aid procedures should be initiated. Common early signs and symptoms of heat illness include headache, muscle cramps, and unusual fatigue. However, progression to more serious illness can be rapid and include loss of consciousness, seizures, mental confusion, unusual behavior, nausea or vomiting, hot dry skin, or unusually profuse sweating. Any of these symptoms require immediate attention. One recommended first aid treatment for heat illness includes, but is not limited to, having the victim rest in a shaded rest area, which is why the standard requires a shaded rest area be provided for employees suffering from heat illness as well as those employees who believe they need a preventative recovery period to avoid heat illness. The Board recognizes that the environmental conditions and the seriousness of the individual's medical condition must be considered when determining the appropriate response, which may range from drinking water and resting in the shade to immediate medical attention. The Board believes that this determination should be

made on a case by case basis, and should not be specified in the standard because of the wide range of environmental and medical conditions.

The standard requires that employees shall be allowed a minimum preventative recovery period of at least five minutes. The Board believes that a shorter preventative recovery period would not be effective and recognizes that a longer period will be necessary in some situations, while other situations will require additional first aid and/or medical treatment. The standard requires that employees who believe they need a preventative recovery period be given a period of at least five minutes, whether they have already been given a preventative recovery period or not. The standard also requires employee training, supervisor training, and written procedures for responding to symptoms of possible heat illness and contacting emergency medical services. Also see the response to Mr. Bernard's comment #1. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

The Board thanks Dr. Schenker for his comments and participation in the rulemaking process.

Fran Schreiber, WorkSafe!, letter dated April 20, 2006

Comment #1: Attached with the letter is a proposal for a more comprehensive standard. This proposal attempts to parallel the proposed permanent standard, but adds additional provisions in order to meet the Board's statutory mandate.

WorkSafe! believes a standard to prevent heat related illnesses and death must be performance based but also contain specifications when certain temperature, humidity and pace of work conditions exist. A standard to prevent heat related illness needs to be a hybrid of a performance based and a specification based standard. The proposed WorkSafe! Standard submitted is such a hybrid. It is preventative in nature and meets the requirements of a comprehensive standard.

Response: The Board appreciates the time that Ms. Schreiber has taken to develop the WorkSafe! proposal for heat illness provided with her comments and to actively participate in the advisory meetings on heat illness held by the Division since 1999. It is not possible for the Board to comment on every element of the WorkSafe! proposal that differs from the Board proposal. Specific elements noted in the comment letter are responded to below. As noted in the response to the comments of Marianne Brown and other labor representatives, the Board recognizes that the proposed standard is geared toward simplicity of implementation by the large number of employers that will be affected by its requirements. And the Board recognizes that it and the Division will need to monitor the effectiveness of the standard in preventing a recurrence of the large number of serious incidents that occurred in 2005 and be prepared to make appropriate amendments should it become necessary to do so.

Comment #2: The WorkSafe! proposal includes additional definitions for the following terms: cooled area, heat wave, palatable water, potable water. Amendments are also suggested in the proposal to several of the definitions contained in the proposed permanent standard.

Response: The Board recognizes that the WorkSafe! proposal includes definitions not contained in the Board's proposal. While the Board does not believe that addition of such definitions to the

proposal is warranted at this time, it is helpful to have proposed definitions, along with the entire proposal to refer to in the future should consideration of additional requirements become necessary.

Comment #3: The requirement for water should be amended to include specific requirements for drinking water to be provided that is fresh, palatable, and suitably cool, in order to assure sufficient water is consumed to prevent heat illness.

Response: The Board agrees with the spirit of the comment that it is important for heat illness prevention for employers to provide drinking water that is not only potable but also inviting to drink. Such a requirement already exists in the Title 8 standard for field sanitation.

Comment #4: WorkSafe! is concerned with a number of aspects of the proposed permanent standard for heat illness with respect to subsection (d) Access to Shade:

- 1) **Shade during break periods.** It does not provide for access to shade during meal and rest periods. Such access is necessary because workers will then have a longer opportunity to recover from the heat and by providing for greater comfort it provides an incentive for workers to take the rest and meal breaks already required by law. Requiring shade during these periods also reduces the risk that workers will seek shade in unsafe areas such as under equipment or under trees which are posted for pesticides.
- 2) **The 5-minute minimum recovery period is inadequate.** Shade alone may not be sufficient to cool an ill worker. The WorkSafe! alternative proposal for heat illness provides for a minimum ten minute recovery period and a requirement for evaluation of the major environmental risk factors for heat illness against recognized standards for heat stress to determine the length of the recovery period. Whenever the combined air temperature and relative humidity yield a heat index of “Danger” as defined by the National Weather Service, not less than 15 minutes of time in shade or a cooled indoor area should be provided per hour.

Response: The Board has responded to some comments made related to shade in the letters from Marianne Brown and other labor representatives, and the letter from Anne Katten and colleagues. With regard to the comment about the WorkSafe! proposal’s element of requiring 15 minutes of shade time per hour when the Heat Index reaches the “Danger” level, the Board believes that such a requirement would be overly prescriptive.

Comment #5: The proposed training requirements need to be more specific as suggested in the WorkSafe! proposed heat illness standard attached with the comment letter. One such specific element in the proposal is for special attention to be paid by supervisors when workers are subjected to sudden increases in temperature of 10 degrees Fahrenheit or more when the base temperature is 80 degrees Fahrenheit.

Response: The Board recognizes the importance of employers increasing their vigilance for signs of development of heat illness and implementation of risk reduction factors beyond those in the proposed standard during heat waves. For employers to satisfy the training requirement proposed for acclimatization, the element suggested by the commenter should be included in their training programs on heat illness prevention.

Comment #6: The proposed permanent standard for heat illness neglects to require other measures to prevent heat related deaths which are included in the WorkSafe! proposal:

- 1) a requirement for workers to be accounted for at the end of a shift
- 2) systems for communication with employees during the work day
- 3) conducting operations during periods of the day when it is less hot
- 4) employee acclimatization to work in heat
- 5) a written emergency response plan.

Response: The Board recognizes the potential value to control of heat illness of all of the measures noted that are included in the WorkSafe! proposal. Elements of some of these recommendations are addressed by other existing Title 8 standards. For the remainder the Board will retain the WorkSafe! proposal for future reference should it become necessary to develop requirements for additional protection.

The Board thanks Ms. Schreiber for her comments and participation in the rulemaking process.

Howard Spielman, California Industrial Hygiene Council, letter dated April 12, 2006

Comment #1: The terms personal and environmental risk factors are defined but there is no mention of employer responsibility for assessing these in the interest of prevention of heat illness. The CIHC wants to ensure the Board is aware of the technical complexities in this area and believes the Threshold Limit Value for Heat Stress and Heat Strain of the American Conference of Governmental Industrial Hygienists could be used for this purpose.

Response: The Board recognizes the technical complexities in the area of assessing environmental and personal risk factors for heat illness. The standard requires employers to provide employees with basic information about risk factors that may affect their vulnerability to heat illness, e.g., age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications. With the exception of the length of time an employee has been working recently in high heat, which is an acclimatization issue, most employers do not have information about their employees regarding their personal risk factors for heat illness and are not expected to have it. The standard does not require employers to get personal information from employees, and employers are neither expected nor encouraged to do this.

Many employers may have information available to them about their employees' degree of acclimatization, because they know where their regular employees have been working and can ask new employees about where they have been working and what kind of work they have been doing recently. Training for employees must include the importance of acclimatization and how it is developed. Employers are encouraged to develop procedures to aid employees in becoming adjusted to work in the heat, such as modifying work cycles or limiting work in heat. It is important to exercise additional caution with employees when there is a heat wave, when new employees come onto a job site, and when employees return to work in heat after an absence lasting more than a few days.

It is up to the employer to develop effective procedures for identifying, evaluating, and controlling environmental risk factors in their workplaces. Generally speaking, the best starting place is to obtain the weather forecast, including temperature and humidity for the area of the worksite, or for the area closest to the worksite. This information can be confirmed by taking measurements of temperature and humidity at the worksite. The temperature and humidity can be evaluated with the Heat Index.

Whatever method employers use to determine temperature and humidity, they should also take into account the work severity and duration at the worksite, the amount of exposure to direct sunlight, and the types of clothing and personal protective equipment used. The Board encourages employers to use the Threshold Limit Value for Heat Stress and Heat Strain of the American Conference of Governmental Industrial Hygienists, or similar guidelines, for this purpose. In addition to having a strategy for dealing with environmental risk factors for heat illness, employees must be trained so that they understand the employer's basic approach, however the Board believes that requiring employers to implement the guidelines contained in the Threshold Limit Value for Heat Stress and Heat Strain of the American Conference of Governmental Industrial Hygienists would be too prescriptive. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment.

Comment #2: The proposed requirement makes employees responsible for recognizing when a preventative recovery period would be needed. Also, shade alone may not be sufficient to effectively stem the increase in core temperature that can result in more advanced heat illness even after removal from exposure to work in heat.

Response: See the responses to Mr. Bernard's comment #1 and Ms. Brown et al comment #6.

The Board thanks Mr. Spielman for his comments and participation in the rulemaking process.

Philip Vermeulen, Engineering Contractors Association, letter dated April 19, 2006

Comment #1: The second sentence of the proposed definition of "acclimatization" suggests that employers may be required to limit employee work to two hours per day for the first 14 days of their employment. This would be cost prohibitive, and additionally the acclimatization status of workers hired from union halls is impossible to assess.

Response: See the response to Ms. Broyles' comment #5.

Comment #2: Protective clothing and personal protective equipment worn by employees is one of the risk factors included in the definition of "environmental risk factors for heat illness". How does a contractor deal with this dilemma when employees are required to wear protective clothing/equipment?

Response: The standard requires that employees and supervisors receive training regarding environmental risk factors for heat illness. This training should include the effect of wearing protective clothing and equipment. Recognition of the increased risk is the first step in dealing with this or any hazard. The standard also requires employers to provide and encourage the

drinking of water, preventative recovery periods with access to shade, and employee procedures for responding to signs and symptoms of heat illness.

Comment #3: A contractor could be charged with discrimination and subject to lawsuits for attempting to make a judgment about individual employee's "personal risk factors for heat illness" as defined in the standard.

Response: See the response to Ms. Broyles' comment #8.

The Board thanks Mr. Vermeulen for his comments and participation in the rulemaking process.

Jay Weir, AT&T, letter received (undated) April 20, 2006

Comment: Proposed subsection (e)(2), Supervisor training, is redundant and is essentially covered by our Injury and Illness Prevention Program. AT&T's supervision is adequately trained in implementing our Injury and Illness Prevention Plan as required under Title 8 Section 3203. All of the items in (e)(2) are adequately covered under subsection (e)(1) of the proposed standard.

Response: The Board applauds the employer's work in training its supervisors in heat illness prevention and response procedures under its Injury and Illness Prevention Program. In its investigations of serious heat illness cases the Division has found that considerable confusion and delay has, in a number of cases, contributed to poor health outcomes for affected employees. In order to prevent deaths and potentially serious injury where employees are exposed to risk of heat illness in outdoor workplaces, the Board believes it is essential to place these employers on notice that they are required to specifically train supervisors in the employer's procedures for implementing the requirements of the standard for heat illness prevention and in particular, as required in subsection (e)(2)(C), the employer's procedures that the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

The Board thanks Mr. Weir for his comments and participation in the rulemaking process.

Approximately 2100 letters were faxed to the Board from individuals with the following similar comment:

Comment: We support the emergency standard and request that the emergency standard be made permanent with all of the following provisions:

- . Education and training for employees and supervisors;
- . Water to be available at all times;
- . Access to a shaded area;
- . Shade and rest period of no less than five minutes; and
- . Making it a misdemeanor for an employer to willfully discharge or discriminate an employee who exercises their rights under the standard.

Response: The proposed permanent standard maintains all of the requested provisions, however, the proposed standard by itself does not make it a misdemeanor to willfully discharge or discriminate against an employee. The proposed standard notes that it is a violation of Labor code sections 6310, 6311, and 6312 to discharge or discriminate in any other manner against employees for exercising their rights under the proposed standard or any other provision offering occupational safety and health protection to employees. Therefore, the Board does not believe that further modification to the proposal is necessary as a result of this comment. The Board thanks all of these commenters for their participation in the rulemaking process.

Oral comments from Public Hearing April 20, 2006

**Julianne Broyles, California Chamber of Commerce and California Employers Coalition
(Coalition members are listed with responses to the letter of Ms. Broyles above dated April 20, 2006)**

Comment: Ms. Broyles commented that with amendments as detailed in her letter (see Ms. Broyle’s written comments) the proposed permanent standard for heat illness could be made at least workable for California employers. She said that her organization believes that, unless amended, the proposal as written by the Division does not, with the legally-required level of specificity, clearly identify what steps an employer must take in order to be considered in compliance with this particular standard. She said that it appears that some of the assertions made in the Initial Statement of Reasons regarding the potential impact on business have not been investigated as required under the California Administrative Procedures Act. She said that she hoped the Board seriously considers the comments in her letter before moving forward on any further regulatory efforts on this standard.

Response: See the responses to Ms. Broyles’ similar written comments.

Carl Borden, California Farm Bureau Federation

Comment: Mr. Borden said that the California Farm Bureau Federation supports the adoption of the proposed permanent standard as written. He said that Federation had been very active in educating its members on this subject and would urge adoption of the standard as written.

Response: The Board acknowledges the commenter’s support for the proposal and thanks him for his participation in the Board’s rulemaking process.

Jim Abrams, California Hotel and Lodging Association

Comment: Mr. Abrams spoke in opposition to the proposed permanent standard unless amended. Mr. Abrams noted that his organization is a member of the Coalition represented by Ms. Broyles, but that he also had made specific comments in his letter (see Mr. Abram’s written comments) and that he was particularly concerned with the proposed scope of the standard and its application to “all outdoor places of employment.” He said that the proposed standard appropriately applied to agriculture, construction, and other industries with continuous outdoor

operations. But he said that in the lodging industry there are many employees who work both outdoors and indoors over the course of the day. Examples he gave were valet parking attendants, lifeguards, bell staff, and restaurant wait staff. He said that the scope of the proposed standard does not take account of the fact that many lodging employees who work outside are also frequently inside air-conditioned areas and therefore do not have the same level of risk of heat illness as employees who are outdoors all day without access to air-conditioned facilities.

Response: See response to Mr. Abrams' similar written comments.

Esperanza Ross, United Farm Workers

Comment: Ms. Ross expressed appreciation for the Board's support and the work of the Division and said she hoped that the permanent standard for heat illness prevention would be adopted soon. Ms. Ross described the events that had led up to the proposal, starting with the death on July 28, 2004, of Asuncion Valdevilla while working in a vineyard and Mr. Valdevilla's son's efforts to address the problem of heat illness through the United Farm Workers and the legislature. Ms. Ross said that the UFW's position supporting adoption of the proposal reflects a compromise made with the Governor. And that while it did not encompass everything the UFW had hoped for, the UFW has consistently supported the main elements of the proposal and urged its quick adoption.

Response: The Board acknowledges the commenter's support for the proposal and thanks her for her participation in the Board's rulemaking process.

William Jackson, Granite Construction, Inc.

Comment: Mr. Jackson commented that the proposal as written does not seem to meet the Board's stated internal standards of being understandable, enforceable, and reasonably necessary to protect California workers. He said that the permanent rule proposal was modified from the emergency temporary standard to apply to all outdoor places of employment regardless of whether there seems to be a risk of heat illness. He said the proposal might not meet the requirements of the Administrative Procedure Act for necessity, clarity, consistency, and non-duplication. He asked if citations for violations for existing Title 8 standards related to heat illness for the cases reported in 2005 had become final orders or were still allegations. He felt that the documentation for the proposal had not answered the question of whether compliance with existing section 3203 for the Injury and Illness Prevention Program would have been adequate to present the cases of heat illness reported to the Division in 2005. He said that if existing standards would have prevented these cases, then the proposed permanent standard was not necessary.

Response: The Board believes that the proposed standard does meet both its own internal standards mentioned by Mr. Jackson as well as requirements of the Administrative Procedure Act. While some of the proposal's requirements may be more specific than others, for example the requirement for provision of one quart of water per hour per employee, the Board believes that all of the proposal's requirements are sufficiently clear to place employers on notice as to

their duties with respect to prevention of heat illness, and to enable Division enforcement staff to determine when the standard has been violated and when it has not. The proposed standard is necessary to avoid a repetition of the events of 2005, when serious heat illness cases reported to the Division far exceeded the numbers reported in prior years. With regard to whether section 3203 by itself would have been sufficient to have prevented the cases of heat illness reported in 2005, it is clear that it was not. The Board believes further that even with the awareness among employers, and employees, that has been raised through the process of development of the proposed standard, existing Title 8 standards applicable to heat illness prevention are not enough by themselves to provide sufficient confidence that appropriate measures are being taken to prevent a repeat of the number of serious heat-related events reported to the Division in 2005.

Georgina Mendoza, California Rural Legal Assistance, Inc.

Comment: Ms. Mendoza served as a translator for several Spanish-speaking farm workers, all of whom spoke in support of the proposed permanent standard for heat illness. The names of these workers were as follows:

Zeferina Perez, Merced County, 20 years as an agricultural worker
Cecilia Mendoza, over 30 years as an agricultural worker, fired for reporting heat stress
Aurelia Sosa, 20 years as an agricultural worker
Edwarda Gutierrez, 20 years as an agricultural worker, need shade and more rest breaks
Maria Orozco, 33 years as an agricultural worker, suffered heat illness in field; called for the need to train supervisors in recognizing symptoms of heat related illness

Ms. Mendoza then gave her own testimony regarding her experience in representing agricultural workers throughout the state. She said that CRLA is frequently contacted by workers who tell them that they either have been demoted or terminated from their employment whenever they voice their complaints about the working conditions they have to endure or if they feel sick. Instead of hearing of farm workers taken to receive medical attention, they get fired and they still have health repercussions that they have to face. Giving the worker the responsibility to ask for an extra break does not seem realistic, particularly in agriculture. At minimum, the standard must specify that employers must provide adequate recovery periods, and to determine adequate recovery periods, the employer shall at least evaluate temperature, humidity, exertion level of work and length of workday, and assume that direct sun exposure adds 15 degrees to the heat index. The standard needs to specify that piece-rate workers must be compensated for their rest periods. Piece-rate workers are at an elevated risk for heat related illnesses, because they have an incentive to work as fast as possible and will forego breaks in order to avoid losing income. In one of last summer's agricultural investigations, workers admitted that breaks were frequently skipped when working on a contract basis. Another worker said that they did not take water breaks at the end of the workday because they needed to finish filling the bin. Therefore, it is too common a problem that there is simply not enough water. CRLA and the agricultural workers simply ask that the Board consider these factors in making its decision.

Response: With regard to the employers responsibility to determine and provide adequate recovery periods, see response to Ms. Brown, et al's comments #6 and #9. With respect to piece rate workers, see response to Ms. Katten, et al's comment #6.

John Robinson, California Attractions and Parks Association (CAPA)

Comment: John Robinson spoke in support of the proposed standard, with a few minor changes. He would like to see the Board consider a few changes to the proposed standard that acknowledge the differences in the types of labor and the types of industry involved. One is the water provision and the access to plumbed water or water fountains; amusement parks provide all their employees access to running water and CAPA believes that should be acknowledged in the standard. CAPA also believes that the shade provision and provision of a method of cooling for people who are beginning to suffer symptoms of heat related illness should be expanded to acknowledge technological means of cooling such as misters or access to cold, running water such as a shower, which might be more effective in lowering the core body temperature than simply access to shade. Most important to CAPA when looking at the proposed standard is the access to shade and how an employee is to acquire that. CAPA realizes the difficulty in providing that access and the ability to reach it and the difficulty of requiring permission or notification. CAPA would like to see that every effort is made by the employee before they seek this shade to notify a supervisor or a co-worker, particular in cases where it affects the safety of other workers and the public. CAPA would request that the standard note this and require that every effort is made by the employee to notify a co-worker or a supervisor prior to seeking relief. This is not permission, but notification.

Response: See the response to Mr. Robinson’s written comments.

Wayne Mitchell and Kirk McBride, State of California Department of Forestry and Fire Protection (DFFP)

Comment: There are a couple of minor adjustments or amendments that DFFP would like to see for the proposed language as submitted that would allow them to continue to operate. DFFP’s primary concern revolves around the wildland firefighting mission, an emergency response role that DFFP provides statewide. DFFP does not want to unduly constrain their operations; they just want to recognize the inherent risk and nature of that particular work. Specifically, there are two things that DFFP would request. DFFP does provide shade to the extent feasible. There are times when they have their employees out working in chaparral lands and in grasslands where there is no shade available. DFFP employs a number of other practices in lieu of shade when there is none available. DFFP would ask that the language of the proposed standard be changed to reflect these alternative measures. In addition, DFFP would request that the susceptibility to heat related illness be included in the physical examination requirement for all employers that provide wildland firefighting services or wildland firefighters.

Response: See response to Mr. Grijalva’s written comment.

Rosie Perez

Comment: Ms. Perez spoke in support of a maximum temperature requirement, whereby work would be terminated if the outdoor temperature reached a certain level.

Response: The Board appreciates the commenter’s concern with respect to the risk of working outdoors at extreme temperatures. The Board has chosen not to include in the proposed permanent standard a temperature limitation on outdoor work as suggested by the commenter because, while attractive in its simplicity, it would constitute an overly simplified response to a complex problem and need. There are times when, for a variety of reasons, work must be conducted during temperature extremes. However, there are means and methods other than prohibiting these activities by which employers can address the risk posed to employees. For example, the duration and the level of exertion of work, and work/rest intervals, can be controlled by the employer to address the risk of heat illness, consistent with the recommendations of the American Conference of Governmental Industrial Hygienists or other generally recognized authoritative source. Also, personal cooling devices are commercially available that can be used in some work applications. Additional measures such as these are not specifically required in the proposed standard which is intended to include only minimum requirements applicable to all outdoor work situations where risk of heat illness may exist. However, all employers, even those covered by section 3395, are required to take whatever steps are necessary through their Injury and Illness Prevention Program to address the risk of heat illness actually faced by their employees.

Daniel Gutierrez, agricultural worker for approximately one year

Comment: Mr. Gutierrez testified regarding his witnessing a fatality related to heat illness. The supervisor at the time did not know how to treat heat illness. The victim just fell to the ground; the supervisor called for an ambulance, but it took about 30 minutes to arrive. When the ambulance did arrive, the victim was declared dead. Mr. Gutierrez asked that the Board adopt a standard that would provide shade and more breaks. He also asked that the Board consider a provision for work stoppage when the temperature reaches an established maximum.

Response: With regard to establishing a maximum work temperature, please see the response to the comment of Ms. Perez. With regard to the comment on providing shade and more breaks, please see the response to Ms. Katten et al written comment.

Dave Pulia, Western Growers

Comment: Mr. Pulia stated that they have found the guidance contained in the emergency temporary standard to be very helpful and very timely to their members. In no case have they been left wondering whether they are in a gray area with respect to any of the provisions of the emergency standard. They also have found early enforcement efforts to be reasonable and helpful with no complaints from members regarding overzealous enforcement. They appreciate the changes that have been made in the proposal for the permanent standard from the language of the emergency temporary standard. They have invested a great deal of time and resources in working with their members to support the full implementation of the standard. With the summer months coming quickly now, they would urge the Board to adopt the proposed standard in its current form so as to ensure continuity of that implementation.

Response: The Board acknowledges the commenter’s support for the proposal and thanks him for his participation in the Board’s rulemaking process.

Gabrielle Kirkland, California Grape and Tree Fruit League

Comment: Ms. Kirkland stated that their organization represents about 85% of the state’s production of tree fruit and table grapes. She spoke in support of the proposed standard.

Response: The Board acknowledges the commenter’s support for the proposal and thanks her for her participation in the Board’s rulemaking process.

Louie Brown, Nisei Farmers’ League, California Citrus Mutual, and the California Association of Nurseries and Garden Centers (Nisei)

Comment: Mr. Brown said that Nisei Farmers’ League’s clients are supportive of the standard as presented. The process has been far too long for this standard to become a reality, and Nisei is concerned that the more we continue to “tinker,” the more we continue just to look over commas and other minor issues, the longer it will be before employers have something that they can follow and the employees have a standard that protects them. Nisei would also like to express their appreciation for the efforts of the Division staff. Nisei’s clients, for a number of years now, have hosted training and safety seminars in the San Joaquin valley for farm workers and supervisors, and heat stress and heat illness training has been part of that curriculum. Last year, Nisei’s clients printed and presented over 10,000 identification cards to farm workers that give them the symptoms for heat illness telling them what to do when they feel the symptoms, including to ask for a break and what emergency response they need to take in those situations. Nisei plans to duplicate that effort this year and until their members and the farm workers in the San Joaquin valley have that information, they will continue to move forward because this is such a critical issue to them.

Response: The Board acknowledges the commenter’s support for the proposal and thanks him for his participation in the Board’s rulemaking process.

Bob Downey, Construction Employers Association (CEA)

Comment: Mr. Downey thanked the Board and Division staff for putting together this standard. However, after having been involved in the advisory committees, he has some concerns. Mr. Downey reiterated what Mr. Jackson had said earlier, that the Board is obligated to make sure they follow what the standard’s requirements happen to be and in the emergency standard adoption, Mr. Downey stated that we have to be sure that this is reasonable and necessary. Mr. Downey is also a little bit disappointed in the advisory committees only because many organizations made recommendations that did not actually end up in the standard. The one particular item that concerns the CEA was commented on at every advisory committee meeting and was not adopted. The specific wording recommended by CEA has been provided to the Board in writing, and it deals with multi-employer operations. The comments also include a point that the Board needs to keep in mind, and that is the fact that multi-employer language has

been adopted in a number of other standards, specifically in steel erection. There was a reason for doing that, and the same reason applies in this standard, to ensure that the regulated community indeed knows what they are required to do, the responsibilities of the individual employer, and the responsibilities of the general contractor or controlling employer on the job site.

Response: See the response to Ms. Lahargoue’s written comment.

Martha Guzman, California Rural Legal Assistance Foundation (CRLA)

Comment: Ms. Guzman reminded the Board that there were still additional illnesses and deaths resulting from heat related illnesses after the emergency standard was in place. She said there are three core areas that remain to be addressed. Having written materials describing exactly what to look for in heat related illness to take home not only for oneself, but also for friends and family is imperative. Having emergency response procedures in writing is something that was completely agreed upon in the advisory committee, maybe not in the same language that CRLA is proposing, but definitely the concept that this should be in writing, whether in the IIPP or elsewhere, is something that had large consensus. The other issue that DOSH brought up today is the importance of acclimatization. Acclimatization and having some sort of procedure is necessary.

Response: With regard to requiring written emergency response procedures for heat illness, please see the response to Ms. Brown et al’s letter, dated April 19, 2006. The Board does not concur with the commenter that a requirement for written procedures for emergency response was generally agreed to in the heat illness advisory meetings held in 2005. The minutes of the advisory meeting of November 14, 2005, indicated that there was extensive discussion of this matter but no general agreements were reached. The one point of compromise noted in those minutes was the statement of Carl Borden of the California Farm Bureau Federation that he could support a requirement for the training procedure for emergency response to be in writing and such a requirement has been added as a substantially related modification to the original proposal in a 15-day notice for public comment.

With regard to requiring availability of written emergency response procedures for responding to heat illness, the Board notes that many such documents are widely available, including on the Internet at the Division’s heat illness webpage and at the websites of many other agencies concerned with heat illness prevention and response.

With regard to the comment on acclimatization, the Board has responded to a comment requesting a requirement for increased employer vigilance over employees’ consumption of water and response to work in the heat if they are not acclimatized or their acclimatization status is unknown. This can be found in the response to Anne Katten and Martha Guzman, California Rural Legal Assistance Foundation, and Georgina Mendoza, California Rural Legal Assistance, Inc., letter dated April 20, 2006. With regard to a requirement for employers to acclimatize employees, while acknowledging the significant findings of the study of heat illness cases reported to the Division in 2005, the Board believes that requiring employers to have a program

of acclimatization for outdoor workers presents problems which it is not prepared to address. As noted in the proposed definition of “acclimatization” in the proposed standard, acclimatization is a gradual temporary adaptation of the body to work in the heat. Such acclimatization is critically important in effective programs for heat illness prevention and has been widely used in traditional hot industries such as glass manufacturing and some mining operations. However, such industries differ from most outdoor work in that the levels of exposure to work and heat are often relatively constant or at least predictable day-to-day, often over long periods of time. Work outdoors frequently can involve variable conditions of temperature and relative humidity, often at varying levels of intensity and duration of work from day-to-day and frequently over relatively short periods of time. The Board believes that given these circumstances the most it can reasonably require at this time with respect to acclimatization is the training requirement contained in the original proposal.

Anne Katten, CRLA

Comment: Ms. Katten stated that she had reviewed the data from the study of 2005 heat cases presented this morning. Ms. Katten noticed in reading the medical report that shade was provided in a certain percentage of the cases, and the examples of the type of shade provided were buildings, trees, and cars. In none of these instances was an extra portable canopy available. Ms. Katten reviewed all of the inspections herself and came to a different conclusion in the agricultural data. There might be a truck available if someone became ill; they could rest in the truck with the air conditioner on. But in 75% of the agricultural investigations, Ms. Katten concluded that there was not shade for breaks for the whole crew. There might be one tree or a car or shade from the port-a-potty.

Response: See the responses to Ms. Katten’s similar written comments.

Maria Gonzales, widow of Gregorio Hernandez Rubio, a construction worker who died at his job site

Comment: Mrs. Gonzales said that she had come before the Board about nine months ago to seek its compassion and its wisdom on the most serious of matters of creating heat standards for workers across the state of California. Nine months have gone by, and she is impressed by how far things have come. She is asking the Board to include comprehensive language in the standard that will save lives. Putting the onus on the employee to ask for a preventive recovery period is unreasonable. If her husband had asked for that, if he could have had enough time to do so, if he had known the symptoms and signs of heat related illness, then he would be here now. But in medical circumstances, there is not always the luxury to raise one’s hand and say, “I think I’m going to die.” Taking the position of having optimal conditions for worker safety is the way to create a business and an industry and a state economy that is humane while also being immensely productive.

Response: The Board wishes to express sympathy to Ms. Gonzalez for the loss she has described related to heat illness. The Board also wishes to express appreciation to Ms. Gonzalez for her active participation in the process to address the problem of heat illness. With respect to

the specific comment regarding the preventative recovery period, please refer to the response to the same comment in the letter of Ms. Brown et al., dated April 19, 2006.

Frank Secreet, Boilermakers Local 549

Comment: Mr. Secreet said that his organization represented several hundred boilermakers and construction workers. Mr. Secreet spoke in support of the need for an outdoor standard but also in support of expanding the standard to include indoor workplaces. Mr. Secreet said that there is no indoor heat standard anywhere in the country, California included. He spent several years working in power boilers, which are the boilers that operate power plants. When the boiler is running, the temperature inside is somewhere between 1000° and 1100°. The unit has to be shut down in order to perform maintenance. The problem occurs less severely when it is a scheduled outage, because the client has ample time to open the doors, put on the forced-draft fans, and clear the unit out to make it feasible for men to work in there. The problem occurs when there is an emergency outage. When the crews go in to repair boiler units, the bottom, where the floor tubes are may be 90° to 100°, but at the top where repairs may also need to be made, the temperature may be 160° to 180°. Mr. Secreet said that when he worked on just such a repair nearly 30 years ago, he briefly lost consciousness. He reminded the Board that the standard is about heat; it is not about sun, the sun is the source of heat. The standard is about heat itself.

Response: The Board appreciates the commenter's bringing attention to the extreme risks of heat illness that some indoor environments can pose to employees, and reminds all employers that they are obligated to take all necessary steps to control risk of heat illness in their particular workplaces. With regard to the specific comment on expanding the scope of the proposal to indoor workplaces, see the response to the written comments of Ms. Brown et al.

Kevin Lancaster, The Veen Law Firm

Comment: Mr. Lancaster said he had represented the widow of a construction worker who had died of heat related illness approximately 12 years ago. It was the worker's first day of work, and he was dead by midday. There was an IIPP in place, but no elements regarding heat. There was water available, but there was no requirement that the workers drink the water. In litigating that case, Mr. Lancaster found that there were OSHA rules relating to dust, to noise, and to every aspect of the workplace that might present some danger of injury or death, but there is nothing about heat. He said that doctors don't seem to know a lot about heat stress, and there has never been a standard in California. Mr. Lancaster is encouraged that a permanent standard is finally before this Board. He is disappointed, however, because he also listened to the older woman who, ten years ago [twenty two years ago], petitioned to start this rulemaking process. She was a librarian in Los Angeles from whom it was learned that libraries in Los Angeles did not have air conditioners. What is learned about these stand-alone libraries in Los Angeles was that given the fact that there was no safety rule relating to heat, these librarians had no way to petition to be allowed to leave their libraries. It was through her strength and courage that this proposed heat standard got started. Mr. Lancaster said he was dismayed to learn that today, although it is called a heat illness, it is not called a sun heat illness, the proposal deals only with outdoor workplaces. Mr. Lancaster encourages the Board to adopt this standard, because if this standard

had been adopted, it might have saved his former client's life and maybe saved his widow at least 12 years of pain. In terms of subsection (a), he did support the deletion of the trigger on environmental conditions which is found in the emergency temporary standard. There was some question regarding whether the lifeguard should be covered, or whether the person that works outside but gets to go inside every once in a while should be covered. Hence the reason for no trigger; it is the employer's legal duty to identify what hazards are presented to a worker in the course of his work activities to determine what precautionary measures should be taken to alleviate or minimize that danger and to then train that employee to take whatever measures are necessary and how to recognize the signs and symptoms of heat related illness, regardless of the type of work involved. In terms of the access to shade, the idea that it is an employee-initiated process in terms of this preventive recovery period, "those that squawk, walk." That is what happens to people who speak and try to enforce their rights. It should be the employer's legal duty to anticipate when the workers need shade and to get them into shade. In terms of the five-minute recovery period, we have already heard from Dr. Harrison that five minutes is nowhere enough time to recover; it should be at least ten minutes.

Response: See response to Ms. Brown et al. written comments. The Board acknowledges the commenter's support for the deletion of the trigger on environmental conditions and thanks him for his participation in the Board's rulemaking process.

Fran Schreiber, representing WorkSafe! and Roofers International Union

Comment: Ms. Schreiber said she was speaking from the standpoint of a construction union. She said that WorkSafe! had submitted a more comprehensive proposed standard for consideration. The main issues, without reiterating what is in her written comments, are that the standard should apply to indoor work as well as outdoor, shade during all breaks, a minimum break should be at least ten minutes, training and emergency response information has to be written, and that the onus should not be on the worker to request the break; it is, in fact, an employer duty to figure out and provide for these breaks because workers will not take them. Ms. Schreiber is also recognizing that this is more of a political than a scientific process right now. She understands that there are political considerations but thinks that there can be some minimal changes. She would like the Board to consider seriously the standard as proposed by WorkSafe!, but she understands that probably will not happen because of the politics involved. At the very least, the "tweaks" that could be made to the standard, even just in one section, to accomplish four of the five issues that she raised, to make this standard something that actually might prevent people from dying this coming summer. Without that, she thinks there will be deaths this summer, and the Board members will have to live with their consciences regarding that. She also wanted to state that Division and the Board have met the burden of necessity for the proposed standard. This is something that can be done—the military does it, the Department of Forestry and Fire Protection does it—the Board's proposal can easily be accomplished because it is more of a performance-based standard. It also bothers her to hear from people that she considers to be good employers that they are looking at this standard as something where they are going to be picked on by the Division and they are going to be targeted for enforcement. If good employers are actually complying with the law, those employers might like to have a standard that provides a level playing field, a standard that gives a baseline so that they are not

unfairly competed against. When she went to talk to the Roofers Union, she showed Doug Ziegler the material developed by the Division regarding research on the 2005 heat illness cases investigated that was included in this morning's presentation, which was very helpful. She said Mr. Ziegler knew both of the roofing contract employers that were included in the study, and that was one of the things that actually motivated him to get involved in this standard, however late. He knew these contractors, he had been struggling with these contractors who had been violating OSHA rules and unfairly competing against the contractors who were signatory to a collective bargaining agreement. He cannot do anything if there is no standard that provides specifics. He cannot go to OSHA and say, "Look, these contractors are unfairly competing. These contractors are not only violating the rights of their workers to a safe place to work and to come home safe at the end of the day, but they are also impinging on decent business people in the state of California," and he was compelled by both of those things to come forward with the letter that he submitted to the Board. The proposed standard is not for picking on good employers, but rather for protecting unrepresented workers who are in construction, agriculture, the back rooms of kitchens, and boiler rooms. Those unrepresented workers need to have a standard that is clear, where they don't have to put up their hand and say, "I'd like to take a break," because they are not going to do that. They need to be able to rely on the rest of us in the world, meaning worker centers, unions, WorkSafe!, and other folks from the Division who then can respond to and keep this level playing field out there.

Response: The Board thanks Ms. Schreiber for her comments and notes that the specific comments to which she refers were submitted in written form in a letter dated April 19, 2006, referred and responded to as the letter from Ms. Brown, et al.

Guy Prescott, Operating Engineers Local No. 3

Comment: Mr. Prescott spoke in support of the standard. He stated that like any good piece of democracy, this standard is a compromise, but it is a compromise that does address the basic need of the Operating Engineers Local members. They have the ability with this proposed standard not just to train the employees, but also to train management, which is a very key element necessary to help prevent heat illness. Hydration is addressed, shade is addressed in a way that is acceptable to the industry, and with that, he supports the standard as written. He does ask that the specific needs of the construction industry be addressed in the future, and that if the standard is expanded or amended, a specific construction-industry-related standard be adopted at that time.

Response: The Board thanks Mr. Prescott for his organization's support of the proposed standard. The Board is mindful of requests that have been made for industry-specific standard of heat illness. The Board and the Division will monitor the impact and effectiveness of the proposed standard on the construction industry. Should information become available that it is appropriate to consider development of an industry-specific standard for construction that will be pursued.

Bruce Wick, California Professional Association of Specialty Contractors

Comment: Mr Wick said that he was also speaking on behalf of Kevin Bland for the Residential Contractors' Association and the California Framing Contractors' Association. Mr. Wick said he appreciates the need for and the importance of a heat illness standard, and he and his organization supports the proposed standard. They would ask that the Board seriously consider the revisions proposed by Cal Chamber. They think many of those comments could help achieve a more workable, clearer standard, and clarity usually gets more compliance out in the field. One difference they have is that they do not want a trigger in this standard. For most of their construction employers, it just is easier to comply with the standard on a daily basis, the way it is currently worded. If, once this standard becomes permanent, the Division then develops a policy and procedure for enforcement, they would like to be a part of that. Their involvement as stakeholders would ensure development of a good standard for understanding it and therefore, enforcement could be very strong because that is a key to any standard.

Response: The Board and the Division acknowledges and appreciates the commenter's offer of his association's member's time and expertise to assist the Division with development of an enforcement policy and procedure document for the proposed standard. The Board also acknowledges the comment supporting the absence of a trigger mechanism in the scope and application of the proposed standard. Also, see responses to Ms. Broyles' written comments on the California Chamber of Commerce proposed amendments.

Don Bradway, Miller Watts Constructors, Inc.

Comment: Mr. Bradway said he was speaking on behalf of the Associated General Contractors Safety and Health Counsel. Mr. Bradway, his employer, and the AGC understands why this standard was written, and they do support it. However, they also strongly support the recommendations that were made by the California Chamber of Commerce. They also feel very strongly that they would not like to see a trigger in this, because they don't want to be beholden to a particular date or a particular set of circumstances; they feel that hydration is important every day of the year, and that is how they train their employees. Employers need to be cognizant of the potential for these injuries no matter what time of the day or what time of the year, because the potential is always there. They would also like to see a provision for alternative cooling methods. In the presentation, it was apparent that shade was available on essentially every one of those cases, but shade is not always effective. They would like to see the availability of other types of cooling devices such as misting devices or even standing under the water truck when it goes by when it's 105° outside. That works very quickly and very well. They would also like to see provisions for plumbed-in water, because the way the standard reads right now, the standard does not specify the source of the required drinking water. They are also concerned about the enforcement of the encouragement of drinking the available water. How do we monitor how much water is being consumed? If you are doing this right, you are encouraging your employees to drink; it is the responsibility of a good supervisor to ensure that the employees are consuming enough water. On a personal note, Mr. Bradway spoke about a heat-related death he witnessed in Southern California last year, which left him devastated. The employee, an apprentice carpenter, had been on the job for two days. The first thing he was told when he started the job was the importance of drinking water and staying hydrated. The employer provided shade and ice water, and they spoke to the employee frequently about the

importance of hydration. When he fell ill, the employer put him in the cab of a vehicle with the air conditioning running. When he vomited, he vomited copious amounts of clear fluid, evidence that he had been drinking water. There was a deep sense of frustration that the employer had done everything they could have done, and the employee still died.

Response: With regard to the comments on provisions for plumbed-in water and allowance of alternative cooling methods, both of these issues have been addressed in substantially related modifications to the original proposal. For additional information see the responses to Ms. Broyles, California Chamber of Commerce, letter dated April 20, 2006. With regard to encouragement of drinking water, please see the response to Mr. Jackson, letter dated April 17, 2006. With regard to monitoring how much water is being consumed by employees working in heat, the proposed standard does not require this, and the Board acknowledges the difficulties inherent in accomplishing this with a great deal of precision or accuracy. Nonetheless, the Board wishes to express that employers must embrace a certain level of responsibility for monitoring of employee consumption of drinking water when working in heat. Monitoring consumption of drinking water during work in heat, while possibly somewhat more difficult in some respects, is no different conceptually than monitoring employee compliance with requirements for use of fall protection, machine guarding or any other safety control measure. At least in one respect, it may actually be less demanding because failure in one particular instance by an employee to consume water will not likely be the particular factor that results in an injury, although failure to drink adequate quantities of water over the course of a day may very well be. It is critically important, particularly in extreme conditions of heat and work, for both employers and employees to recognize explicitly that frequent consumption of water during work in heat is a safety control measure. Employers also have a responsibility for helping to assure consumption of water because conditions controlled by them such as the location and attractiveness of the water supply and allowance of break periods for its consumption, can all affect the degree to which employees actually take advantage of water as a heat illness control measure.

Jeremy Smith, California Labor Federation

Comment: Mr. Smith said that a standard is also needed for indoor workers such as boilermakers, those working in industrial laundry facilities, and others who work in hot, intolerable conditions, whether indoors or outdoors. He also expressed the hope that as the year progresses, work would begin on an indoor standard, as there is a large segment of the labor force that is not covered by the current proposed standard, and they need to be covered as well.

Response: See the response to Ms. Brown et al. written comments and the Board thanks Mr. Smith for his participation in the rulemaking process.

Samantha Turner, Collishaw Construction

Comment: Ms. Turner spoke regarding the need for the proposed standard. She said that her company has a fixed facility, where they do fabrication and huge warehouses that get very hot in the summer; they also have a construction division and a landscape division. Ms. Turner expressed the opinion that as employers, they have the ultimate responsibility to take care of

their people. Considering the Hispanic workforce, they are afraid, no matter how many times they are told the opposite, that they will lose their jobs if they say anything. That is not just a problem, that is illegal, and somebody needs to “step up” and take care of it. Employers have an obligation to provide water, shade, breaks, and monitor the employees for signs and symptoms of heat related illness. It starts with training superintendents and foremen and educating the people in the field. This standard is necessary; it needs to be reasonable, but it also needs to encompass indoor workers.

Response: With regard to employees having to request the preventative recovery period and the application of the standard to indoor workplaces see responses to Ms. Brown et al. written comment #5.

Board Member Harrison

Comment #1: Dr. Harrison asked that the Division look at whether five minutes really is an adequate period of time for the prevention of heat related illness.

Response: See response to Dr. Bernard’s comment #1, Dr. Bonauto’s comment, and Mark Schenker’s comment #1.

Comment #2: The onus should not be placed entirely on the employee to determine when a preventative recovery period is needed. He asked for additional language requiring training for supervisors in recognition of heat-related illness, which is addressed in the section regarding employee training, but also how to assess the frequency and duration of recovery periods necessary when the employee reports heat illness.

Response: See response to Dr. Bernard’s comment #3, and Marianne Brown’s comment #6 and #9.

Board Member Rank

Comment: Mr. Rank questioned whether the employer should be responsible for monitoring personal risk factors that are unrelated to the job such as age, size, preexisting medical conditions or use of caffeine, drugs, or alcohol.

Response: See response to Ms. Broyles’ comment #8.

Board Member Moreno

Comment #1: Training should be conducted in a language the employee can understand.

Response: The Board recognizes that, in order to be effective, employee training must be in a language that the employee can understand. The Injury and Illness Prevention standard requires employers to have a system for communicating with employees in a form readily understandable by all affected employees on matters of occupational safety and health, including provisions

designed to encourage employees to inform the employer of hazards at the worksite without fear of reprisal. The Board believes that the employer's obligation to provide training to all employees that is understandable and effective is sufficiently clear.

Comment #2: Supervisors need to be trained to recognize the early signs of heat illness in their employees and enforce a rest or recovery period, if necessary.

Response: The standard requires that employees and supervisors receive training on the different types of heat illness and the common signs and symptoms of heat illness. Supervisor training must also include the procedures the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness. The Board believes that these requirements address the concern of the commenter, and therefore no further modification to the proposal is necessary.

Comment #3: Cooling devices such as misters in lieu of shade should be considered carefully and in depth.

Response: See response to Ms. Broyles' comment #12.

Board Member Arioto

Comment #1: The issue of misters and plumbed-in water should be looked at carefully.

Response: See response to Ms. Broyles' comments #11 and #12.

Comment #2: The standard could list the symptoms of heat illness and how to recognize them.

Response: See response to Board Member Moreno's comment #2.

MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM THE 15-DAY NOTICE OF PROPOSED MODIFICATIONS

No further modifications to the information contained in the Initial Statement of Reasons are proposed as a result of the 15-day Notice of Proposed Modifications mailed on May 12, 2006.

Summary and Response to Written Comments:

Paulita Bernuy, Sister of Social Service, letter dated May 23, 2006

Comment: The modifications are not stringent enough and leave, again, too much leeway to the "goodness" of the employers. I urge you to make the modifications tighter and with penalties more stringent.

Response: The Board acknowledges the commenter's concern with the potential effectiveness of the proposed standard and its modifications. However, the comment lacks specification on how

the modifications should be tightened and penalties are addressed in other Title 8 standards that are beyond the scope of this proposal. Therefore, the Board declines to modify the proposal further in response to this comment.

The Board thanks the Ms. Bernuy for her participation in the rulemaking process.

Kevin Bland, Granado Bland, APC, on behalf of California Professional Association of Specialty Contractors, California Framing Contractor’s Association, and Residential Contractor’s Association, letter dated May 30, 2006

Comment #1: It is still our position that the Board consider a heat illness prevention standard tailored to fit the unique needs of construction and avoid duplication with current construction safety order requirements.

Response: The Board acknowledges this comment but it does not address the modifications to the original proposal. Therefore, the Board declines to modify the proposal further in response to this comment.

Comment #2: To reduce confusion and create a more understandable and precise standard, we believe the following changes to the modified language of proposed subsection (e)(1)(I) should be considered:

The employer’s procedures for ~~ensuring~~ providing that, in the event of an emergency, clear and precise directions to the work site can ~~and will~~ be provided as needed to emergency responders.

The word “ensure” in the modified proposal means to guarantee which can be misconstrued by enforcement and is not practical. The word “providing” establishes the true intent of the provision by requiring the employer to actually impart the information to the employees. Further, the term “and will” creates too large a burden on the rank and file employees, in that it requires each employee to “provide clear and precise directions” rather than to rely on the written procedures.

Response: The Board’s proposed modifications to (e)(1)(I) are related to the proposed modifications for a new subsection (e)(3) requiring the procedures for this and a number of other training subsections to be in writing and to be made available to employees and representatives of the Division upon request. The terms “ensure” and “will” are employed in the modified language to emphasize that compliance with (e)(1)(I) will be judged in part on the likely effectiveness of the procedure consistently preparing employees and supervisors to provide clear and precise directions to their particular worksite in the event of an emergency. This requirement highlights the importance of employers being well-prepared, regardless of circumstances and worker location, to rapidly and effectively contact and obtain emergency medical services. Particularly for employers with non-fixed or temporary worksites, this modified language clarifies that generic procedures and one-time training are unlikely to be sufficient for compliance, and that they will probably need to develop procedures specific to

their particular operations, worksites, and staffing patterns in order to be sure of ongoing and continuous compliance with the requirement, and to periodically audit the substance and effectiveness of implementation of the procedures. Therefore, the Board declines to modify the revised proposal in response to this comment.

The Board thanks Mr. Bland for his participation in the rulemaking process.

Melissa Calocerinos, letter received May 30, 2006 (undated)

Comment: Regarding modifications to proposed subsection (d), Access to Shade, there is a reference to cooling measures other than shade. What other than shade and extra clothing and sunscreen can provide protection from UV light? Shade with open ventilation is extremely important cooling/sun protectant method in all occupations, not just the agriculture industry, especially if these employees work outside all day in the sun (construction work or roofing for example). Shade is vital in all occupations.

Response: Although desirable, the Board notes that the proposed standard is intended to reduce risk of heat illness, rather than the effects of UV radiation upon the skin. The Board recognizes the concern of the commenter that shade be available for the preventative recovery period in all places of outdoor employment, not just agriculture. However, the Board believes that it is appropriate, in recognition of their wider range of worksites and potential resources, to provide nonagricultural employers the option of providing equivalent cooling through means other than shade where they can demonstrate that these measures are at least as effective as shade in allowing employees to cool during the preventative recovery period. Therefore, the Board declines to modify the proposal further in response to this comment.

The Board thanks the commenter for her participation in the rulemaking process.

Maria Gonzales, Widow of Gregorio Hernandez Rubio, letter received May 30, 2006

Comment: The commenter thanks the Board, advisors, and the general public for admirably addressing this safety issue with an open process and a courageous heart. She expressed hope that prevention and recovery from indoor heat illness will be addressed in the near future. She stated that the proposed standard is a huge contribution to the welfare of all workers in California.

Response: The Board acknowledges these comments and thanks the commenter for her participation in the rulemaking process.

William Jackson, Granite Construction Incorporated, letter dated May 30, 2006

Comment #1: In the Notice of Proposed Modification to California Code of Regulations dated May 12, 2006, the Standards Board Executive Officer states by reference to Government Code Section 1346.8(c) that proposed modifications are either (1) nonsubstantial or grammatical in nature or (2) sufficiently related to the original text that the public was adequately placed on

notice that these proposed changes could result. We do not believe that either of these is the case. The changes are more the grammatical in nature and appear to have regulatory effect. It is impossible to surmise how a reasonable member of the regulated community could have determined from the original notice of public hearing that these changes, particularly those in 3395(d), could have resulted. It is impossible to adequately respond to the Board's request for comment on these modifications without the Board's Final Statement of Reasons or the response to the oral and written comments submitted to this rulemaking record. Without those documents the public cannot determine which if any of the comments or recommendations were incorporated into the modifications or the rationale for including or rejecting them. In fact, without the Final Statement of Reasons and the proposed responses to the oral and written comments it would seem impossible for the members of the Board to make an informed decision about the appropriateness of these changes or even the original proposal. The May 12, 2006, notice goes on to state, "The standards have been modified as a result of these comments and Board consideration." When did the Board convene to consider the oral and written comments submitted to the rulemaking record of the original proposal?

Response: The Board acknowledges the comment with regard to its compliance with provisions of the Government Code. The Board believes the Notice of Proposed Modification to the original proposal complies with legal requirements. The Board further believes that release of the proposed modifications without the Final Statement of Reasons and response to comments does not preclude the opportunity for the public to comment meaningfully on the proposed modifications.

Comment #2: With respect to the modification proposed in subsection (d) why does the Board transfer the burden of demonstrating that alternative cooling measures to employers? As written, the last sentence is an exception to the requirement for providing shade, much like the requirements associated with requesting a variance. This proposal does not identify to whom and when must an employer "demonstrate that these measures are at least as effective" in order to invoke the exception? If the Board agrees with the recommendations to allow the use of alternative technologies like misting machines to help employees cool the standard should be amended to allow their use without the additional burden of getting a variance.

Response: The proposed modification allowing for alternatives to shade for cooling in nonagricultural workplaces modifies the proposed subsection (d) to become a requirement for shade or at least as effective control measures reduce or prevent heat illness. Shade satisfying the definition of subsection (b) is identified as an engineering measure that is effective in providing such cooling and provides essentially a standard by which other measures will be judged. As with other Title 8 standards requiring hazard controls, the cooling effectiveness of alternatives to shade implemented by employers will be evaluated on a case-by-case basis in the course of enforcement inspections. It is not necessary, nor the Board's intention, to require nonagricultural employers to pursue a variance where they wish to take advantage of the option to use alternatives to shade. It is important that employers be continuously mindful of the fact that some alternative cooling measures may provide effective cooling under some environmental conditions, but not others. For example, under conditions of high relative humidity, simple movement of the air by a fan will generally provide significantly less increase in evaporative

cooling than would be provided by simple movement of air in conditions of low relative humidity. Thus, nonagricultural employers wishing to use alternative cooling measures will need to be vigilant of the particular conditions in which alternative cooling measures are being proposed for use, as well as on-site changes in those conditions, if they wish to be confident of remaining in compliance with the modified requirements of proposed subsection (d). Therefore, the Board declines to modify the proposal further in response to this comment.

Comment #3: The modification proposed for subsection (e)(1)(I) is confusing. When providing the training required by subsection (e)(1) how does the Board intend for an employer to communicate that “clear and precise directions to the work site can and will be provided as needed to emergency responders” as detailed in the modified proposal language. The section would be as effective and much clearer if written as:

The employer’s procedures for providing emergency responders with clear and precise directions to the work site.

Response: The modified language of proposed subsection (e)(1)(I) is not a requirement to communicate to employees the fact that clear and precise directions to emergency responders will be provided. Instead, the proposed modification is intended to require employers to communicate to their employees and supervisors the means and methods in the employer’s procedures that will enable the emergency notification to be reliably and consistently accomplished when needed. The Board believes the language as modified is sufficiently clear and declines the amendment suggested by the commenter. For additional explanation, see also the response to Mr. Bland’s comment #2.

The Board thanks Mr. Jackson for his continued participation in the rulemaking process.

Anne Katten and Martha Guzman, California Rural Legal Assistance Foundation, and Georgina Mendoza, California Rural Legal Assistance, Inc., letter dated May 26, 2006

Comment #1: It is appropriate that the revision to 3395(d) which allows other cooling measures in lieu of shade excludes agriculture because provision of shade is feasible in agriculture. However, since exposure to sun adds 15 degrees to the heat index, we are highly skeptical that any employers will be able to demonstrate that other measures are at least as effective as shade.

Response: The Board acknowledges the commenter’s support for the limitation in scope of the proposed allowance for alternatives to shade during the preventative recovery period.

Comment #2: The commenters support the revision of proposed 3395 (e)(1)(I) which clarifies that both supervisory and non-supervisory employees must receive training in the employer’s procedures for ensuring that, in the event of an emergency, clear and precise directions to the worksite can and will be provided as needed to emergency responders. It is also our understanding that consensus was reached that training should be provided “in a language and manner workers understand” and we urge the Board to add this requirement to section 3395(e)(1).

Response #3: The Board acknowledges the commenter's support for the proposed modification to the language of subsection (e)(1)(I). With regard to the language in which required training is to be provided, this concern is addressed elsewhere in this document in response to a verbal comment by Board Member Moreno at the public hearing April 20, 2006, as follows:

The Board recognizes that, in order to be effective, employee training must be in a language that the employee can understand. The Injury and Illness Prevention standard requires employers have a system for communicating with employees in a form readily understandable by all affected employees on matters of occupational safety and health, including provisions designed to encourage employees to inform the employer of hazards at the worksite without fear of reprisal. The Board believes that the employer's obligation to provide training to all employees that is understandable and effective is sufficiently clear.

Comment #4: The commenters support the addition of the requirement that employer's procedures for complying with this standard, and responding to possible heat illness, including providing emergency medical response must be documented in writing and provided to employees and their representatives upon request. This improves enforceability and accountability.

Response: The Board acknowledges the commenter's support for the proposed modification adding new proposed subsection (e)(3).

Comment #5: The commenters are concerned that the revision to 3395(e)(1)(c) is overly restrictive. Frequent consumption of water is important any time risk factors for heat illness are present. This includes any time when workers may not be acclimatized, protective clothing is worn, work is strenuous or the work environment is warm or hot, not just times when the work environment is hot and employees are likely to sweat more than usual. Sweating is not a good predictor of risk of heat illness as sweating sometimes stops when workers begin to experience heat stroke.

Response: The Board agrees with the commenter that frequent consumption of water is important to prevention of heat illness any time risk factors are present. However, the purpose of subsection (e)(1)(c) as originally proposed, and as modified in the 15-day notice, is to provide extra emphasis to employers of the particular importance of assuring that employees are informed of the importance frequent water consumption during those times when risk of heat illness is elevated beyond that normally encountered in their particular worksite. Therefore, the Board declines to modify the proposal further in response to this comment.

The Board thanks the commenters for their participation in the rulemaking process.

Don Milani, Marsh Advantage America, on behalf of Associated California Loggers, letter dated May 18, 2006

Comment: The commenter poses a series of questions seeking to elucidate the application of particular requirements of the standard as originally proposed.

Response: The Board acknowledges the questions raised in the commenter’s letter. However, the questions do not address the modifications to the proposal in the 15-day notice. Therefore, the Board declines to respond to the specifics of each question or modify the proposal further in response to this comment.

The Board thanks Mr. Milani for his participation in the rulemaking process.

Nancy Moorhouse, A. Teichert & Son, Inc., letter dated May 24, 2006

Comment #1: The commenter participated in the two advisory meetings as well as the public hearing and do not believe adequate consideration was given to written or public comments.

Response: The Board acknowledges the commenter’s concern. The Board carefully considers stakeholder comments at advisory meetings and public hearings when deciding upon adoption of both the details and the totality of proposed occupational safety and health standards.

Comment #2: In the Notice of Proposed Modification to California Code of Regulations dated May 12, 2006, the Standards Board Executive Officer states by reference to Government Code Section 1346.8(c) that proposed modifications are either (1) nonsubstantial or grammatical in nature or (2) sufficiently related to the original text that the public was adequately placed on notice that these proposed changes could result. The proposed changes by the Division appear to have regulatory effect, yet are unknown without the Board’s Final Statement of Reasons. The commenter is in a conundrum given the fact that as a engineering contractor (not building contractor) and member of the regulated community, the commenter has not seen or been responded to with regard to previously sent correspondence submitted to the rulemaking record, or the rationale for including or rejecting such comments.

Response: See the response to Mr. Jackson’s comment #1.

Comment #3: The proposed changes need to ensure that the Administrative Procedure Act has been followed and financial impact ascertained.

Response: The Board thanks the commenter for her concern with the process used to promulgate the proposed standard. The Board adheres to the requirements of the Administrative Procedure Act when proposing and adopting standards.

Comment #4: As currently written, the last sentence in the modifications proposed to subsection (d), Access to Shade, is an exception to the requirement for providing shade, much like the requirements associated with requesting a variance. This proposal does not identify to whom and when must an employer “demonstrate that these measures are at least as effective” in order to invoke the exception. If the Board agrees with the recommendations to allow the use of

alternative technologies like misting machines to help employees to cool, the standard should be amended to allow their use without the additional burden of getting a variance.

Response: See the response Mr. Jackson’s comment #2.

Comment #5: The modification proposed for subsection (e)(1)(I) is confusing. When providing the training required in subsection (e)(1), how does the Board intend for the employer to communicate that “clear and precise directions to the work site can and will be provided as needed to emergency responders.” Recommended wording in lieu of this would be: “The employer’s procedures for providing emergency responders with clear and precise directions to the work site.”

Response: See the response to Mr. Jackson’s comment #3.

The Board thanks Ms. Moorhouse for her continuing participation in the rulemaking process.

K. Okau, letter postmarked May 23, 2006

Comment: The newly proposed subsection (e)(3) should be modified to provide that the training procedures specified be made available to employees “upon commencement of employment and upon request.”

Response: The Board notes that the language of the proposed modification already provides that the required procedures are to be made available to employees and to representatives of the Division upon request. It is not necessary to specify that the procedures be provided to employees “upon commencement of employment” because as a risk control measure the training itself on the procedures is required to be provided prior to an employee’s exposure to risk of heat illness. Therefore, the Board declines to modify the proposal further in response to this comment.

The Board thanks the commenter for participation in the rulemaking process.

Francisco Ramos, letter dated May 27, 2006

Comment: Regarding modifications to proposed subsection (d), Access to Shade, in which it states that in the agriculture industry employers can substitute cooling measures other than shade in lieu of shade, how will the employer show that his substitute for shade works as well as shade? Will there be need to inspect these devices periodically to see that they are working properly? How accessible will these devices be to the workers in the fields?

Response: The Board wishes to clarify in response to this comment that the language of the proposed modification to subsection (d), allowing for cooling measures in lieu of shade, provides that this exception to the requirement for shade for preventative recovery periods does not apply to employers in the agriculture industry. On the question of how the alternatives will be assessed for effectiveness, see the response to Mr. Jackson’s comment #2. With regard to periodic

inspection of alternative cooling devices, the employer may use that or any other effective method to ensure that the cooling devices they use are appropriate and at least as effective as shade. Therefore, the Board declines to modify the proposal further in response to this comment.

The Board thanks Mr. Ramos for his participation in the rulemaking process.

John Robinson, California Attractions and Parks Association, letter dated May 30, 2006

Comment: The commenter supported modifications to the original proposal that address plumbed water and alternative cooling methods other than shade. He said his organization still has concerns should a worker leave a job post to take a preventative recovery period without notifying a supervisor or other employee and expressed hope that this issue could be addressed in the Division's enforcement guidelines.

Response: The Board acknowledges the commenter's support of the modifications noted. The Board anticipates that the Division will welcome informal comments from the public when it undertakes development of enforcement guidelines for the proposed standard once it takes effect.

The Board thanks Mr. Robinson for his continued participation in the rulemaking process.

Jay A. Weir, AT&T Corporate Safety and Health, letter received May 25, 2006 (undated)

Comment #1: The modifications to proposed subsection (e)(1)(C) appear to be extremely subjective in nature. We propose that (e)(1)(C) read as follows:

(C) The importance of frequent consumption of water, up to 4 cups per hour when the employees are likely to be subjected to higher temperatures than usual and the effects of the higher temperatures in the performance of their duties.

Response: The Board acknowledges the commenter's concern with the potential effectiveness of the proposed standard. However, the Board does not believe that the commenter's suggested language provides any further clarification to the current proposed language as modified. Therefore, the Board declines to modify the proposal further in response to this comment.

Comment #2: The commenter believes that proposed subsections(e)(1)(H) and (e)(1)(I) are already a part of our standard Injury and Illness Prevention Program under Title 8 3203 and does not need to be added as an addition to it for most industries.

Response: The Board applauds the employer for including the elements of proposed (e)(1)(H) and (I) in their Injury and Illness Prevention Program. If the procedure in the commenter's IIP Program is effective and employees and supervisors understand its application to response to heat illness that may satisfy the requirement of proposed (e)(1)(H) and (I) as modified. The Board acknowledges the commenter's concern, but because the comment is not directed at the changes made to the language of the original proposal in the 15-day notice, the Board declines to modify the proposal further in response to this comment.

Comment #3: The commenter believes that the section on supervisory training, (e)(2) is redundant and essentially covered by our IIPP.

Response: The Board acknowledges the commenter's concern, but because the comment is not directed at the changes made to the language of the original proposal in the 15-day notice, the Board declines to modify the proposal further in response to this comment.

Comment #4: The commenter believes that the new proposed section (e)(3) adds another additional redundant layer to the existing IIPP by requesting a new specific separate written program.

Response: The Board acknowledges the commenter's concern, but believes Note No. 1 in section (a) clearly states that proposed Section 3395 does not require employers develop a new specific separate written program for heat illness prevention if the employer's IIPP effectively addresses the requirements of Section 3395. Therefore the board declines to modify the proposal further in response to this comment.

The Board thanks Mr. Weir for his continued participation in the rulemaking process.

Bruce Wick, California Professional Association of Specialty Contractors, electronic mail dated May 30, 2006

Comment #1: The commenter has given significant commentary as the Heat Illness standard has been formulated. The commenter still thinks an eventual separate construction standard is the best long term answer.

Response: The Board acknowledges the comment with respect to the desirability of a separate standard applicable to the construction industry. However, the comment is not specific to the modified language. Therefore, the Board declines to modify the proposal further in response to this comment.

Comment #2: The commenter supports the proposed revisions to the standard, but also asks the Board to consider one possible amendment that would be revising the first sentence of 3395(e)(1)(I) as modified in the 15-day notice to read:

The employer's procedures for ~~ensuring~~ providing that, in the event of an emergency, clear and precise directions to the work site can ~~and will~~ be provided as needed to emergency responders.

Response: See the response to Mr. Bland's comment #2.

The Board thanks Mr. Wick for his continued participation in the rulemaking process.

Doug Ziegler, United Union of Roofers, Waterproofers, and Allied Workers, letter dated April 20, 2006

Comment: The commenter’s letter is identical to a letter received by the Board on April 19, 2006, regarding the original proposed standard heard by the Board on April 20, 2006.

Response: The Board has responded to this comment, which was originally received during the 45-day comment period for the original proposed standard. See Summary and Response to Oral and Written Comments: Letters dated April 19, 2006, from Marianne Brown, and from Barry Lubovski, Building and Construction Trades Council of Alameda County, AFL-CIO, and letters dated April 20, 2006, from Cookie Cameron, Communication Workers of America, Local 9412, Eric Frumin, UNITEHERE, Fran Schreiber, WorkSafe!, and Doug Ziegler, United Union of Roofers, Waterproofers, and Allied Workers. The Board acknowledges this comment but it does not address the modifications to the original proposal. Therefore, the Board declines to modify the proposal further in response to this comment.

Sandell McLaughlin, letter dated May 23, 2006

Comment #1: Under (e) Training (1) Employee training, subsection C, the suggested change states, “...when the work environment is hot...” The word “hot” needs to be defined in some manner, such as a combined heat and humidity measurement established by the AMA or something concrete.

Response: The purpose of subsection (e)(1)(C) as originally proposed, and as modified in the 15-day notice, is to provide extra emphasis to employers of the particular importance of assuring that employees are informed of the importance of frequent water consumption during those times when risk of heat illness is elevated beyond that normally encountered in their particular worksite. The Board believes that requiring all employers with employees working outdoors to determine the temperature and humidity on a continuous, or even intermittent, basis would be unlikely to substantially contribute to control of employee risk of heat illness while at the same time consuming resources that could be used to a greater effect in assuring implementation of control measures, such as providing readily available drinking water along with shade and other means of cooling. Therefore, the Board declines to modify the proposal further in response to this comment.

Comment #2: In regards to subsection F “The importance to employees of immediately reporting to the employer symptoms or signs of heat illness in themselves, or in co-workers,” will the lessons be verbal, bilingual, and include the exact procedure for reporting? Also, who will do the educating about the signs and symptoms of heat illness?

Response: The comment refers to subsection (e)(1)(F) to which a nonsubstantive addition of “to employees” is added to clarify the focus of the required training, and who needs to report signs and symptoms to the employer. The comment does not provide suggested revisions to the proposed modification. Therefore, the Board declines to modify the proposal further in response to this comment.

ADDITIONAL DOCUMENTS RELIED UPON

None.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

These standards 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 standard. 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.