

**Cal/OSHA Advisory Meeting
Heat Illness Prevention in Indoor Places of Employment
Tuesday, February 28, 2017
Oakland, CA**

Welcome: Juliann Sum, Chief, Cal/OSHA

Meeting Chairs: Eric Berg, Steve Smith, Corey Friedman, Amalia Neidhardt

Notes: Grace Delizo, Susan Eckhardt

MEETING ATTENDEES

<u>NAME</u>	<u>AFFILIATION</u>
Veronica Alvarado	Warehouse Worker Resource Center
Don Anderson	CA Dept. of Corrections & Rehabilitation (CDCR)
Matt Antonucci	CSATF
Anthony Arceneaux	Glass, Molders, Pottery, Plastics & Allied Workers (GMP) Local 17
Kevin Bland	Ogletree Deakins/California Framing Contractors Association (CFCA), Western Steel Council (WSC), Residential Contractors Association (RCA)
Carl Borden	Calif. Farm Bureau
Steve Cisneros	Gallo Glass
Mike Davis	Communications Workers of America (CWA) District 9
Ben Ebbink	Fisher Phillips
Marti Fisher	California Chamber of Commerce
David Flores	Grimmway Farms
Deborah Gold	
Luisa Gratz	Int'l Longshore & Warehouse Union (ILWU) Local 26
Shane Gusman	Broad & Gusman LLP
Gail Hayden	Calif. Farmers Markets Assoc.
Karen Heckman	San Francisco Dept. of Public Health
Trudi Hughes	Calif. League of Food Processors
Conrad James	Basalite
Derrick Jarvis	E&J Gallo Winery
Bruce Jefferson	warehouse worker
Nan Jiao	UCLA Industrial Hygiene graduate student
Christina Juarez	PG&E
Roger Isom	California Cotton Ginners & Growers Assoc. (CCGGA) & Western Agricultural Processors Assoc. (WAPA)
Anne Katten	California Rural Legal Assistance Foundation (CRLAF)
Garrett Keating	Cal/OSHA
Cristina Kinsella	
William Krycia	Cal/OSHA
Rebecca Laws	CA Dept. of Public Health (CDPH)
Bryan Little	California Farm Bureau Federation
Scott Madar	ORCHSE Strategies
Nicole Marquez	Worksafe
Barbara Materna	CDPH – Occupational Health Branch
Michael Musser	California Teachers Association (CTA)
Steve Older	Int'l Association of Machinists (IAM) Local 1173

Perry Poff	Peterson Law Corporation
Mike Rehor	Pactiv
Cynthia Rice	California Rural Legal Assistance Foundation (CRLA)
Nicole Rice	Calif. Manufacturers & Tech. Assoc.
Kevin Riley	UCLA – LOSH (Labor Occ. Safety & Health Program)
Kathleen Roberts	City of Sacramento
John Robinson	Calif. Attractions & Parks Assoc.
Amber Rose	Fed-OSHA
Lee Sandahl	Int'l Longshore & Warehouse Union (ILWU)
Fran Schreiber	Kazan Law
Mitch Seaman	California Labor Federation
James Seward	Cal/OSHA
Jeremy Smith	State Building Trades
Zeynep Sisli	UCLA IRLE/LOSH
Terry Thedell	San Diego Gas & Electric
Kevin Thompson	Cal-OSHA Reporter
Jora Trang	Worksafe
Elizabeth Treanor	Phylmar Regulatory Roundtable-OSH Forum
Judy Whitall Lee	Cal/OSHA
Bruce Wick	California Professional Association of Specialty Contractors (CALPASC)
Gil Wong	CDCR

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Juliann Sum, Chief, Cal/OSHA, welcomed attendees to the first ever meeting for a brand new regulation, Heat Illness Prevention in Indoor Places of Employment. She introduced panel members from Cal/OSHA Corey Friedman, Attorney; Steve Smith, Principal Safety Engineer, Research and Standards Health Branch; Eric Berg, Deputy Chief, Research and Standards, and Amalia Neidhardt, Senior Safety Engineer, Research and Standards. She also introduced Grace Delizo and Susan Eckhardt, both Senior Safety Engineers in Research and Standards, who are taking notes. This project is the result of legislation passed last year, SB1167, requiring Cal/OSHA to propose a standard to the Standards Board within 2 years. She noted that we're on a very fast time track because of all the steps required in the rulemaking process. We have a rigorous rule-making process; right now we're in the pre-rulemaking stage. We want to work with you in the pre-rulemaking phase to get the language of the regulation as close as possible to the final. We have developed draft language that we believe is objective, practical and understandable. We have background documents on our website.

Steve Smith, Principal Safety Engineer, said that we've had an outdoor heat regulation for 12 years. Now we have a legislative requirement to provide a proposed indoor heat regulation to the Standards Board. The legislation talks about a 2019 date, but there a lot of steps we have to go through in addition to our advisory process. We want to work out language that is most appropriate and protective of workers. Your comments are important to us, on the language of the discussion text, but also on the technical and economic feasibility of the requirements. Any comments or documentation that you can provide us will help us to prepare for the rulemaking process. You can reach us through our webpage, or through the principle contact for this project, Amalia Neidhardt (aneidhardt@dir.ca.gov).

Bruce Wick, California Professional Association of Specialty Contractors (CALPASC), stated that he wants to make sure we're all on the same page. He said the Division is supposed to propose a regulation by 1/1/19. His thought is that we have to get something to the Standards Board by then, and then the regulatory process begins.

Juliann Sum said that the way Bruce understands the process is different than the way we are reading the requirements. She clarified that in pre-rulemaking, we send language to the Standards Board staff. We then work with staff to prepare a package for rulemaking. 1/1/19 is the end of the regulatory process. After that, it goes to OAL for adoption. We are in pre-rulemaking now. The Board will decide, by 1/1/19, whether to adopt the standard and send it to OAL for approval.

Kevin Bland, representing CFCA, RCA and WSC, read from the bill. He questioned the requirements for the Board to review a standard as opposed to adopt a standard by 1/1/19.

Juliann Sum said that we have to work with the Board staff to start rulemaking by about January 2018.

Cynthia Rice, California Rural Legal Assistance (CRLA), said that there's nothing in the statute to prohibit a more timely and accelerated process. From a worker advocate's standpoint, we want to proceed as quickly as possible.

Juliann Sum said that while it may seem that we could go through the process faster, we have so many approval steps that we have to go through within the Administration.

Kevin Bland, reiterated that the process is complicated, and said that there is a difference of a year in the way that the timeframe is being understood. He said we don't want to rush into something that's not going to be effective or enforceable. It's pretty quick for something that is this complicated.

Don Anderson, CA Dept. of Corrections and Rehabilitation (CDCR), asked if there is a block diagram of the path for development of an occupational health standard.

Juliann Sum replied that there is a link on our website to this.

Kevin Bland stated that one could go to the page announcing the indoor heat advisory and there is a link there.

Don Anderson asked whether for this bill there would be dates posted leading up to 1/1/19?

Juliann Sum said no, since there are many approvals that must be obtained and much of the process is beyond our control.

Steve Smith reminded attendees that the bill and the rulemaking steps are on our webpage. Regardless of which timeline is used, they're both fairly aggressive timelines and we look forward to getting advice and moving this along expeditiously.

Carl Borden, California Farm Bureau Federation, asked whether a review of injuries and illnesses due to indoor heat was done, as was done for outdoor heat.

Steve Smith stated that we didn't include that in this advisory, because this regulation is mandated by legislation. We went through our own data internally, but we didn't develop a presentation on it for this advisory process.

Carl Borden said that looking at injury and illness data would be informative.

Steve Smith then said that we would go over the discussion draft. We'll go through each subsection.

Amalia Neidhardt, Senior Safety Engineer, reiterated that we are interested in input, comments, concerns, suggestions, and information on cost and feasibility. Amalia summarized the scope and application in subsection a) as stated in the draft.

Mitch Seaman, California Labor Federation, expressed his strong support that the scope does cover everyone. While there are pronounced problems in a few industries, this affects pretty much everyone, as every area of the state gets hot in the summer. It comes down to less what industry you're in, and more about the control measures taken by the employer to deal with the hazard. He had two questions. First, did the threshold levels of 80 and 90 degrees Fahrenheit come from certain sources directed by the legislation, or was there specific research that drove those levels? Even if you're doing very light work, 90 degrees is at the very least uncomfortable. Is there any research that shows that workers can work safely in 90 degree heat without dramatically increasing the likelihood of heat stress? Second, in number 2, under exception 1, they assume that means that the dry bulb temperature doesn't exceed 90 degrees during those 4 days? A panel member nodded yes.

Carl Borden had a question about how the three temperature tiers mentioned in the initial paragraph square with the provisions in the two exceptions. He asked if he was misunderstanding something about these two provisions.

Eric Berg, Deputy Chief, Research and Standards, explained that if you go through the scope and application, and you're not covered by the regulation, then you don't need to go to the exceptions.

Mike Rehor, Pactiv, asked, where would temperature be measured? He said that many of his facilities have ranges of temperatures that can vary from location to location. This is too broad; you won't have continuous temperatures. About the air-conditioned temperature-controlled environment, they often use spot cooling to blow cold conditioned air on employees based on where they're working. This is different than the air-conditioned environment described in Exception 1.

Luisa Gratz, Int'l Longshore & Warehouse Union (ILWU) Local 26, said that her union represents workers in Southern California who do work in steel, warehousing, petroleum pipelines, and pharmaceuticals manufacturing. In one of their warehouse contracts, they had the first indoor heat standard language. They fought for this 10 years ago. It went all the way up to Schwarzenegger, and he vetoed it. In warehouses there are no heat controls; work involves lifting and picking heavy and light items; the temperature accumulates throughout the day and can vary from day to day. You have to consider many differences, such as daytime vs. nighttime temperatures, departmental differences, and light vs. heavy work. In this warehouse, there are temperature monitors based on humidity and temperature. There are digital readers throughout the warehouse and their members carry handheld monitors. The company provides Gatorade in the lunchroom on the hottest days. People respond to heat differently, and acclimatization is not

always possible because the heat is not steady for 14 days; it can come and go. People can have various health conditions that affect their ability to handle heat. In their union office, where employees do computer work, when the air conditioning goes down, employees go home. When it's 80 degrees, people are getting sick. We have to be flexible. It's not a worker issue vs. employer issue, it's a human issue. There will be many challenges and we have to work together. Luisa will share a copy of the ILWU indoor heat language found in the union contract with us.

Anne Katten, California Rural Legal Assistance Foundation, stated that she appreciates the way the standard is drafted to include all industries. However, they are concerned that the thresholds of 90 degrees dry bulb and 80 degrees dry bulb are too high to adequately protect sensitive individuals, and don't take into account humidity. They think lower thresholds should be considered, possibly 85 degrees heat index for light work, or possibly lower, and 80 degrees heat index for moderate to heavy work and even lower if there is radiant heat involved. She would defer to others with evidence of a need for an even lower threshold.

Deborah Gold, former Deputy Chief for Health and industrial hygienist who worked for Cal/OSHA for a long period of time, commended the staff on this draft. She agreed with Anne Katten that 90 degrees dry bulb is a bad threshold, because with humidity factored in, 90 degrees is effectively 100 degrees. This is too high, especially for individuals who are not acclimatized. In an indoor environment, it is not a problem to use heat index as a threshold. This allows humidity to be factored in; humidity tends not to be a problem in outdoor environments in California, but is a factor in many indoor environments. Also, someone will need to define a "properly functioning" air-conditioning system. And, when the air-conditioning is temporarily disabled, unacclimatized individuals work in much higher temperatures than they are used to. In just one shift, heat illness can occur at temperatures below 90 degrees dry bulb, particularly if humidity is a factor. So Exception 2. needs to be looked at and expanded to require employers to have procedures in their IIPP to address this type of situation.

Mike Rehor suggested using wet bulb temperatures instead of dry bulb temperatures as the scope-defining temperatures, as that's what's used in OSHA guidelines and ACGIH.

Kathleen Roberts, City of Sacramento, had a concern about determining coverage for employees that work both indoors and outdoors on a consistent basis. Parking employees work in small vehicles that are not air-conditioned, they go in and out every few minutes, and determining which standard they are covered by would be helpful. It can be 107 degrees outdoors and even hotter in their vehicles, and PPE is also a factor for these workers.

Nicole Marquez, Worksafe, applauded Cal/OSHA's inclusion of all industries in this Cal/OSHA draft. They'd like to ensure that the standard covers temporary and contingent workers. Also, they believe the 90 degree and 80 degree dry bulb thresholds are too high and that lower thresholds should be considered. Workers' tasks, from light to very heavy work, need to be considered, as well as PPE. She shared some stories about work in temperatures under 90 degrees. In recycling, workers do light, repetitive work, such as sorting material. However, many employees have complained about heat illness symptoms working in temperatures below 90 degrees. Restaurant workers are exposed to indoor temperatures below 90 degrees for long periods of time but also feel the heat on their bodies. A restaurant worker's health was impacted from long-term exposure, over a 10-year time period, to heat from working over a stovetop, grill and fryer. They've heard from warehouse workers who perform moderate, heavy and very heavy work in temperatures at or lower than 80 degrees. Worksafe asks that a lower threshold be considered.

Bruce Jefferson, a warehouse worker, works 8–10 hours/day, 5–6 days days/week, 50-60 hours/week in the heat. He has witnessed workers passing out while unloading a cargo container, even though the outdoor temperature was 75 degrees, but the temperature inside the cargo container may have been 110 to 130 degrees. During a heatwave in 2016, a worker inside a container asked for a 5 minute break to escape the heat. The supervisor refused to give the break; management then threatened employees and told them to get back to work. The worker passed out, but no one had training. Bruce works for a company through a staffing agency. There has been no training on heat since 2015. In another incident, there was no gurney available to move a worker who needed to be brought to the shade. There is no air-conditioning anywhere in the facility to cool down.

Terry Thedell, San Diego Gas & Electric, made 2 points. One, he said it is novel to look at a workplace and whether the heat source is indoor or outdoor. If the heat source is indoor, obviously the standard will apply. But if the heat source is outdoor, i.e. sunshine, then the standard becomes a heatwave standard, a seasonal standard. The other point, anytime you tie a regulation to a measurement, dry bulb temperature, you are concerned with accuracy. There are many types of thermometers – mercury, digital, bimetal strip thermometers, or one picked up from Disneyland. He hopes the Division will explore what it actually means. An instrument is only as good as the hand that holds it.

Steve Older, Int'l Association of Machinists (IAM) Local 1173, said he agrees that a dry bulb measurement is not adequate. They represent a military base in Yuma, AZ, where they have military standards of heat index. When the heat index hits a certain point, they describe the kind of work that can be done and the breaks that have to be taken, along with hydration that has to be given. You can order soldiers in the military to do this. They also represent manufacturing plants. For example, a forge, that does casting, with plenty of radiant heat. Temperatures vary throughout the room. Car and truck dealerships also vary as to what, if any, kind of ventilation they have. In Tracy, a worker at a dealership died from heat illness during a heat wave. It was very humid. They put him in a cool room, then sent him home. He had to walk about 200 yards across the parking lot to get to his car, and that's where he was found. He died a few days later. Some workers in warehouses are temps. They may not be trained to the same standards as permanent employees. Employers sometimes don't take heat illness seriously. It is long overdue that we're coming up with an indoor heat standard.

Luisa Gratz emphasized the importance of addressing temporary workers and also workers that load trucks. There is no way these workers are going to be acclimatized, as their work is inconsistent and they do different things from day to day. On another point, this standard cannot be solely focused on a supervisor's observations. Supervisors have many other duties. We need an interactive process with the employees in the workplace. The dry bulb should not be used, rather the wet bulb should be used. She pleaded that the 90 degree threshold should be forgotten as it is not a useful number. You have to go to 75 degrees, and depending on the kind of work that is done, it may be in excess.

Christina Juarez, PG&E, suggested considering truncating the scope to "this section applies to indoor places of employment". She also said that the language about dry bulb temperature exceeding 90 degrees is about risk and hazard assessment, and suggested moving that language to section (d) Identification and Assessment of Heat Stress Hazards. We want all people who work in indoor environments to assess heat risk. If you open up the scope to "all places of employment" and then require hazard assessment, you'll pick up all those people who are concerned about their employees being injured below these criteria.

Anthony Arceneaux, Glass, Molders, Pottery, Plastics & Allied Workers (GMP) Local 17, said he works at a glass manufacturing plant. They do forming of glass; it is 150 -160 degrees plus at all times in that area. Then it goes out for warehousing and inspection. At all times it is 10 degrees hotter inside than the outside temperature. He raised a question about air-conditioning systems. Certain areas have a cooling system where a 2 foot square area is cooled, and an employee stands there for 2 minutes out of a 15 minute period, but their whole area is not cooled. He wants clarification about whether this counts as air-conditioning. He doesn't think it should.

Mike Davis, Communications Workers of America (CWA) District 9, thanked and applauded Cal/OSHA for its trailblazing work on developing this new policy. He said he concurs with others that a dry bulb of 90 degrees is not safe enough. He discussed a situation where a technician picks up a vehicle and then goes to a customer's home, which is an indoor place of employment at that time. He asked how an employer would have the jurisdiction and the ability to regulate the climate inside a customer's home. It will be a union challenge to consider. He also discussed flight attendants that work inside airplanes. The temperature inside a plane sitting on the tarmac can climb very high. For long periods of time, that can bring on heat stress illness. Maybe we can broaden the scope of indoors to also include verbiage of confined spaces.

Elizabeth Treanor, Phylmar Regulatory Roundtable-OSH Forum, said there is no question that there are risks to workers from indoor heat. There have been some tragic fatalities and it is important to have a standard that will protect employees. They concur with Chief Sum's point that the standard needs to be practical, clear and objective. They certainly support that. She asked her members what they used for indoor heat. They use the ASHRAE standard for indoor environments, which has ranges for winter and summer. But 80 would be the highest of that.

Michael Musser, California Teachers Association (CTA), said that heat, especially in the Central Valley, can be very challenging for students and educators. Often, in the Central Valley, there are portable classrooms that are called temporary, but due to financial situations, they are long lasting. They have no air-conditioning, and educators work in them certainly for longer than 1 hour, for a school day. They may be severely affected by heat illness. Custodial staff, or skilled trades, who work in a variety of environments, can be affected by heat. We want to make sure that we're concerned with issues that affect all employees in the State of California. When we talk about different levels of activity, light work could be an electrician, just using their arms, but if there's absolutely no air movement in the room, that individual could be severely affected. Kitchens may not have proper air movement. We need to look at the scope to see who all could be affected by these situations and the type of work they do. And light work doesn't mean that the heat won't affect them in an adverse way. He hopes that we focus on the needs of every worker in the State of California.

Bruce Wick, said that in construction they've been walking in outdoor heat illness for 12 years, so they have a lot a familiarity with how it works. He gave two examples of how the scope and application can get confusing. In one, materials are delivered to the jobsite. But they may have a shop, with hardware and things. He wouldn't consider it heavy work, where they put light materials into a truck and send it out. You might have a contractor with 300 field employees and 3 warehouse employees in their shop. For those 3 employees, you have to walk in this whole different situation. It might be nicer to have a bridge, for people who have been very familiar with 3395 for outdoors, where 3395 can apply, rather than have a completely separate regulation to deal with. In a second case, and he clarified that he wasn't talking about logistics, a warehouse where freight and material are coming in and out all day long. Take a retail environment with a

couple of employees in an air-conditioned retail sales environment, and you have 1 or 2 in the warehouse where materials come in. It's not the logistics kind of intensity. Maybe you have 10 employees with a pretty part time safety coordinator. This is a very complex regulation, how are we going to get compliance? Is there a way to simplify it for the smaller people with less intensity of that work? If they're thinking, am I doing light, moderate or heavy work, he is concerned about compliance if we want those folks to take a step forward. How do we deal with the variety of workplaces, from logistics warehouses in the Inland Empire to small shops in strip malls throughout California?

Perry Poff, Peterson Law Corporation, applauded Cal/OSHA for bringing in the objective measurements. Whether they need to be adjusted or not, we do have keys. His concern is regarding 90 degrees, 80 degrees, it doesn't say at what time or for what duration. There should be a little more guidance. Is it a time-weighted average?

Karen Heckman, San Francisco Dept. of Public Health, said that for San Francisco, where they don't get heat very often, the standard, the way it's written, could be triggered in a single day. Most of their office buildings do not have air-conditioning. They rely on openable windows. So, she wanted to build on that last comment about triggers to consider if there's a duration or number of days to have an additional exception.

Amalia Neidhardt said that if there are additional comments, participants could send an email. That way we can keep moving on to the next subsection.

Eric Berg said that we would discuss definitions next. He briefly summarized each of the definitions in subsection b). He mentioned that dry bulb is the temperature you would read on any thermometer. When going over the definition of indoor, he said that the inside of airplanes would be considered indoor. Discussing radiant heat, he explained that conduction is through direct contact with a hot object, while convection is through hot air, whereas radiant heat doesn't require any medium to transfer heat. As an example of very heavy work, he gave jogging. Discussing wet bulb globe temperature (WBGT), he said it takes into account the dry bulb temperature, globe temperature, humidity and air movement. He displayed a WBGT monitor, and pointed out its parts, including the copper ball in black that absorbs radiant heat. He said that the WBGT temperature in the meeting room was 62 degrees, per the reading on the WBGT monitor, while the dry bulb temperature in the meeting room was 71 degrees. The WBGT monitor takes all the factors into account and does the calculation for you. The WBGT temperature applies to places of work with high radiant heat areas. Eric showed a monitor that measures the heat index, and said you could buy a monitor that measures dry bulb temperature and humidity for about \$10. You can use a free phone app to get the heat index. He pointed out that the heat index in the meeting room was about the same as the dry bulb temperature (70 degrees), since the humidity in the room was low. This was about 10 degrees higher than the WBGT.

Nan Jiao, UCLA Industrial Hygiene graduate student, had comments about acclimatization and workload. For acclimatization, the definition in the draft states that acclimatization peaks in most people within four to 14 days. However, she found in the ACGIH and NIOSH guidelines that they use 7 to 14 days. She noticed that in the outdoor heat standard, 4 to 14 days is also used. She suggested coming up with a more evidence-based description for acclimatization, as 4 to 14 days is less conservative than 7 to 14 days.

Eric Berg replied that the definition was copied straight out of 3395.

Nan Jiao suggested, regarding workload, that metabolic rates be put in each section, as this would make clearer the definitions of heavy work and light work. For example, ACGIH came up with a range of 360 to 470 watts for heavy work. But, she said, it may not be okay for the employer to measure the metabolic rate of the human body, so she would leave that up to other people.

Eric Berg said he didn't know how one could measure watts.

Nan Jiao said that it may be possible to calculate metabolic rate based on heart rate.

Terry Thedell suggested that there be added, under definitions, a definition for "air-conditioned". What about swamp coolers? Does a simple fan constitute air-conditioned, or are we talking about HVAC? He also said he is intrigued by the high heat concern in electrical utility rooms. He's spent 18 years in electric utility and hasn't yet found a high heat electric utility room. You need to be more specific. For electric power, is it generation or storage? They have lithium batteries and a variety of new technologies for power storage, and they aren't anywhere near a heat concern. Another definition you may want to consider is for a "competent heat accessor", because this standard is going to create a whole new profession of people who want to go out and do heat measurements, either with a \$197 Kmart heat machine or a \$5300 3M or your \$10 machine. This is going to create a new cottage industry. For people who can't do the measurements themselves, they're going to go out and hire someone. So we're going to see the need for a competent heat assessor.

Anne Katten said that under definitions for moderate and heavy work, lifting should be incorporated. Rather than including walking as an example, listing it as a specific factor would be clearer. She also said a definition for "cooled rest area" is needed, with it being located as close as practicable to the general work area, protected from radiant heat, maintaining a cool temperature based on what is safe and adequate cooling, having some seating, and hopefully a supply of water.

Luisa Gratz said that regarding acclimatization, she is opposed to any procedure that superficially imposes certain conditions such that if the worker does not meet those conditions, they can continue to be sick. Everyone responds differently to temperature, clothing, motion, time of day, type of building or room they're in. We should not conclude the discussion on this. We cannot assume that someone will be in the same circumstances for 14 days, unless they're in an office with controls. People who work in and out of an office, in and out of a container, in and out of their work area are not going to have the continuity required for a scientific measurement for 14 days or 4 days. Life doesn't work like that; science does, when it's encapsulated and studied. Once you leave the study, life is different. She thinks it's superficial. In this section it says "employees who have worked at least two continuous hours...". Employers are going to go nuts with this. They're going to tell you, "I can't run my plant with this". I'm a union rep and will have to listen to this. So we have to simplify this. We need to set a standard that is a reasonable standard, with wet bulb measures. They bought handheld monitors at Home Depot and Lowe's that are a combination humidity and temperature meter, for about \$10 to \$12 each. They bought 12 of them for a large warehouse. The workers can then judge for themselves, "am I feeling hot?" and look at it and see what it triggers based on the regulations. You don't want so many criteria that it will implode. You will defeat your purpose. Please take that into consideration.

Bruce Jefferson, warehouse worker, asked why there is no definition for a "cooled rest area". The warehouse that he works in is part of the Port of Los Angeles. It is one of the largest

properties. There are seven departments: Sears, Lowe's, Suzuki, Kmart, Amazon, TJMaxx and New Balance. They can't wear shorts or short sleeves when it's hot. They are constantly wearing long pants, long-sleeved shirts and steel-toed boots. These containers are coming from China, overseas -- Vietnam, Hong Kong. We don't know what's inside the containers when we bust the seals on the doors and are told to unload them. So it should include a definition for type of clothing.

Eric Berg replied that we have clothing adjustment factors. The zeroes in the table were taken from ACGIH. If you have any recommendations for changes, we are happy to hear them. Please let us know.

Nicole Marquez echoed Bruce's comment about the lack of a definition for "cooled rest area". They have heard from workers who are not provided with a cooled rest area. For example, warehouse workers have said that the rest areas are either not accessible, or it takes too long to get there, and when they do get there it's actually not cool. Also, restaurant workers who are exposed to high heat may walk outside to cool off. But if the cooled rest area is outdoors, it can be too hot to be effective. So the cooled rest area needs to be defined. A restaurant worker in southeast Los Angeles recalled sitting on a stool in a corner of the hot kitchen to take a break. This is because the industry promotes a culture of "if you can't stand the heat, get out of the kitchen". Many workers feel they have to resign because of the unsafe kitchen conditions. She repeated that they would like to see a definition for "cooled work area". Also, a definition for "heavy work" should include walking at a fast pace; frequent work such as walking should be part of the list rather than given as an example, and lifting heavy loads should be added. They also would like to see a definition for "representative". They agree that representatives and workers should be involved in developing a heat illness prevention plan and the training curriculum and implementation of that. The definition of representative should be a broad one, so that when there is no union, workers and their rep can have a role in participating in the development of the heat illness prevention plan. At the core of this plan is illness prevention and preventing death in the workplace. Earlier it was mentioned about having limitations or exceptions for when people can be exposed, in the scope and application. She wanted to remind everyone that a worker can die or get sick just during the duration of one day, so they would like the scope to be broad in its application.

Michael Musser asked Eric about light work. Eric had earlier said that the activity level for light work involves sitting. But Michael pointed out that the description also mentions standing with arm movements. Would light work also include standing and moving around the worksite? For example, an educator in a classroom who may sit some of the time, but is also up and about, writing on boards, working with students, etc. Would that be considered light work?

Eric Berg said that light work includes standing and occasional walking. He said that yes, the example of an educator in a classroom would be light work.

Marti Fisher, California Chamber of Commerce, said the overall theme here is that the proposal is too complex. From the questions asked today, from both labor and management, we don't understand the implementation of a lot of this. What is light work, what is heavy work, moderate work? Walking fast, walking medium. It is going to cause a lot of confusion and compliance and enforcement problems. Moving into the definitions, she said she understands that some of these are taken from the industrial hygiene TLV section. This is going to be implemented by employers who may or may not have industrial hygienists on staff. They shouldn't necessarily have to. We have to make sure that the average employer can understand and comply. This is just way too complex. This is throughout the regulation, including in the scope. She likes the

idea of moving the risk assessment into the risk assessment section rather than trying to figure out what the scope means. One definition that is missing is for personal risk factors. This is very important, because it has an impact on how an individual is going to respond to working in the heat. She also wanted to point out that the way this is written, this is definitely a major regulation that will be subject to the economic impact report for major regulations. This is very costly, the way that it's written. Even if every affected employer, which is every employer with an indoor workplace, has to buy a wet bulb device that costs \$300, that probably puts you into the major regulation right there, not including the training and all the other things that have to occur. Also, the chart about the clothing factors -- this has so many calculations for employers to try to figure out. The definitions for the rates of work -- the employee is sometimes walking fast, sometimes walking slow, sometimes walking fast or slow in a warmer area. How do you determine which one they are, and which controls they are going to be subject to? Are these assessments really necessary? Can we come up with a simpler way to figure this out, so it can actually protect employees and be effective, without overwhelming employers and opening the door to an intense amount of enforcement actions and litigation?

Amalia Neidhardt reminded Marti that if she has suggestions Cal/OSHA would welcome a letter with those.

Kevin Bland said that Marti had stolen a lot of his thunder. He continued, saying that he didn't want to sound insensitive, but he could probably "out-poor" almost anyone in the room. He said that he grew up very poor, with no indoor plumbing, on a farm. He could describe some of the dirtiest jobs you've ever had to work in, in some of the worst environments, which he did personally. He repeated that he was not coming from a standpoint of being insensitive. He put up hay in the summertime in Missouri with 100% humidity and 100 degrees out. He worked in their grain bins in the same kind of temperatures. He was an ironworker, outside, Local 433, a second generation union guy, so he said he's sensitive to that. He worked frying fish. He smelled like fish, so he put his pants outside to keep his grandmother happy, then watched the cats drag his shoes off in the morning, and then didn't have shoes for school. He came to California with two suitcases and \$50 in his wallet. So he hasn't always been an attorney. He knows what it's like to work, and what it's like to be poor, and what it's like to struggle. He said that people always seem to view the mountain from the valley they're standing in. And when you look at that mountain, it seems impossible to climb. That's where we seem to be with this regulation. We've heard a lot of stories and anecdotes about what people have to go through or have to do in their little space in the world. It can't be so complex. When you make something this complex, with this many different moving parts, it's impossible to actually help the people that you want to help. And the employers that want to comply won't be able to comply. And the employees who want to be helped, who are really exposed to some of these things, like in some of the factories and some of these environments in the warehouses -- one of the ladies here said it nicely, that in her environment, she's a union rep, that if we continue to go down this road, it will be impossible to comply and impossible to enforce. We have to be careful and take a step back; what looks good on paper doesn't always work out in the field. We need to be real and come up with something that can be complied with. Maybe it won't work for every single person. Comply with what the statute demands us to do. It says to consider these things, but it doesn't say everything has to be in there. We need to figure out something we can comply with, and he thinks we can get there. We spent all morning on the complexities and barely got out of the scope. He didn't think we were done with the scope, and now we're talking about the definitions. He said his hobby is power lifting. Dead lifting 600 lb. for an hour in 90 degrees is a good light workout for him. You'll say that's heavy lifting, but no, it's not for him. You've got to put this stuff in perspective for the individual workplaces where they understand what they have to do, where the employees know what they can demand of their employers. In the end, the

employee needs to be able to read this and see what they can hold their employer to, and the employer, the supervisor, who really enforces it, has to be able to read this and understand. For those of us who work with regulatory language all the time, we can sit in this room, and come up with all this great stuff, but it has to be able to be complied with out there.

Luisa Gratz stated that everything being said today is valuable. She said she appreciates the people who are here today, because it's not just a union problem, it's a human problem. We need the union to see it as something that we need to work on together to accomplish. One gentleman here spoke, he's a warehouse worker. He works in containers, and he speaks for hundreds of thousands of people not only in California, but all over the United States. We need to listen to him. Some of our members also work in containers on the docks, the longshoremen. They have a heat standard; I gave a copy to Grace and Susan so you can see what the ILWU has done. But it's still inadequate; there have been days when people pass out on docks. She said she can't take the position to want to save everybody, but we have to make an effort to address the kind of standard that will be reasonable and useful to the majority of people. She suggested that we find a way to do interactive processes, because what we study in the laboratory is different than what happens outside the laboratory. We need to involve all the workers, like this gentleman (she motions to Bruce Jefferson). He will tell you how he feels, what he wears, what his day looks like, how he responds to repetitive activity and the weights that he has to move around. Those are the kind of people that we need to get here. Those of us who don't do this work don't understand it; they do.

Steve Smith announced that it was almost 12:00 and a good time for a lunch break, with the meeting to resume at 12:45.

LUNCH

Amalia Neidhardt reconvened the meeting and reminded attendees to sign in, especially those that did not receive a meeting invitation directly from her, because they will need to be added to the stakeholders email list. She also asked that if attendees know of any group, organization or individual that should also be invited, that they forward the meeting information to them and they can request Amalia to add them to the stakeholder email list. That way, they will be informed of any future steps or updates. She can also be reached by clicking her name on the web page for Indoor Heat. Amalia thanked attendees for the input received so far and reminded them that the Division will be accepting written comments, especially information on cost and feasibility, until the end of March. Amalia then invited comments on subsection (c) Heat Illness Prevention Plan, which was developed from information taken from sections 3203 and 3395.

Kevin Riley, UCLA Labor Occupational Safety and Health Program, commended DOSH on including language about ensuring active worker involvement in developing and implementing the plan and would like to add worker involvement in updating the plan. That's consistent with language that's in the Aerosol Transmissible Diseases standard. He also recommended being clear about who is responsible for carrying out the plan and make sure that information is clear to everyone in their particular worksite.

Deborah Gold agrees that the plan needs to have a procedure for reviewing and updating the plan, preferably annually. She also recommended, in the plan review or somewhere else, a review of the history of heat illness in the facility or operation.

Elizabeth Treanor stated that one of the issues that the Division needs to be concerned about is that there is a wide variety of workplaces covered by this. They feel it's important that all are

covered if they have an indoor work environment. She agrees that having a responsible party would be a good addition. One recommendation is having a heat illness prevention plan with the provisions that are listed, but have the information below as an attachment because there are going to be some employers that don't have a radiant heat source like office environments. For them to look over this entire document will be overwhelming for them to understand. They recommend having the scope and then the other provisions (d)-(j) could possibly be an appendix, so if an employer has this, here are some suggestions on how to do this. There are some employers that PRR has that already use the NIOSH criteria document. That is not appropriate or intelligible for the average person for a lot of the employers who do not have an industrial hygienist on staff or don't even understand that you need one. Some of these provisions are going to be very difficult for them to implement.

Nicole Marquez applauds the inclusion of worker and worker representative involvement in the development of the heat illness prevention plan. WorkSafe supports the idea of including the worker and their representative in updating the plan as well as ensuring that the plan applies to temporary and contingent workers.

Veronica Alvarado, Warehouse Worker Resource Center, echoed Kevin Riley's position that it's really important that workers actively participate in the development of any heat illness prevention plan and that such plan or procedure allows for a representative or non-union representative to participate in situations where there is no union at the workplace.

Bruce Jefferson commented on subsection (c)(6) and stated that there hasn't been any heat illness prevention training at his warehouse since September 2015 and there is no medical staff at the facility to assess anybody who has heat illness of any type. Something has to be done as far as training of management.

Eric Berg explained that the requirements of subsection (d) Identification and Assessment of Heat Stress Hazards is broken up into two different types of work environments, one with high radiant heat work areas (d)(1) and then the majority of workplaces without high radiant heat (d)(2). In places with high radiant heat, such as foundries, that would require the use of a wet bulb globe temperature (WBGT) device. In all other workplaces, employers would be required to either determine the heat index, which is just temperature and humidity, which can be calculated automatically on simple devices or measure the WBGT. Subsection (d)(3) requires the assessments to be conducted when the temperature is at or near high for that year. Then reassess the hazards when there is information that indicates that the previous assessment was inaccurate.

Terry Thedell stated that the use of WBGT was discussed during the outdoor heat illness advisory meetings twelve years ago with Len Welsh and that it was just too complicated. He fears that will require a competent heat assessor and a cottage industry popping up only to do these assessments for people and who knows what kinds of instruments and procedures that will be used as well as the technical aspects. There's a variety of things out in the market and he doesn't know if there's an ASTM standard on their accuracy or ability. When we get to the idea of an exposure limit and are asked to sum the WBGT values, how's that done? There can be a number of ways which that can be calculated. There needs to be more thought into what is actually meant by the WBGT measurement. Later on we'll talk about the actual value of those measurements in tables 2 & 3 given the fact that only 2 or 3 degrees separate the short term exposure limits just based on this one measurement.

Marti Fisher agrees with Terry Thedell and stated this is way too complicated and that there needs to be a much simpler method to assess employee exposure to heat in the workplace. It will require employers to employ other people to try to determine these things and it's too difficult if people are in and out of work areas and different levels of heat. There needs to be a much simpler method in order for employers to be able to comply and provide the appropriate protections.

Bryan Little, California Farm Bureau Federation, said that he was also involved in the process back with Len Welsh. They made a decision collectively that trying to use wet bulb temperatures or heat indexes or anything else added an unnecessary layer of complication when we could have relatively simple temperature thresholds as we have now with the outdoor Heat Illness Prevention standard. One other thing they could never wrap their hands around was dealing with the kind of clothing that people were wearing. We had difficulty dealing with how we were going to have people wear different kinds of clothes so we could control their risk and their potential exposure and what kind of influence that had on their exposure. Eventually we decided that was an uncontrollable factor that we really couldn't do anything about. When you're adopting STELs and other things like that from the ACGIH, you don't have any of that in the outdoor heat illness standard and you don't really need it. You can have something much simpler, easier to understand and easier to implement if you go down a road more like that than the road we seem to be going down right now.

Kathleen Roberts asked if there is going to be an exemption for emergency personnel. They have firefighters and police officers that they would not be able to successfully identify and assess a heat stress hazard given that they may be in a burning building in level A suits and can't come outside for a rest or cool down and it's 107 degrees outside, or they're responding to a grass fire and they have to go from place to place. Some of the rigs for the fire department are not air conditioned so they would not even be able to go to the rig. So if there would be an exemption for them, that would be helpful.

Anne Katten stated that the measure of humidity and radiant energy is very important in using the WBGT in the indoor standard. The technology has improved a lot since the outdoor standard was adopted. It's become more affordable and easier to use and in indoor situations there tends to be higher humidity and more sources of radiant heat.

Deborah Gold pointed out that with outdoor heat we aren't just taking dry bulb temperature but the assessment was that the major source of radiant heat was the sun and, thus, there are provisions for shade. That was how they functionally incorporated other factors than just dry bulb temperature. WBGT is a number that comes from a device and that there is a need to specify the accuracy or the type of meter to be used for WBGT if it's going to be required. WBGT is only going to be required when there's a radiant heat load. People have been measuring heat index for many years and the National Weather Service has charts. We may want to specify accuracy of instruments but they're cheap and affordable and just put out a number.

She pointed out that health standards sometimes do require complex measurements. There are times when employers are required to determine exposure to chemicals and that's a necessary function. These are actually pretty simple. Employers are required to measure annually the ventilation rates of exhaust ventilation systems. Employers are required to annually inspect their HVAC systems. Employers are capable of doing this and don't have to necessarily hire an industrial hygienist. She feels that someone has to assess heat stress hazards and has to take into account these fundamental factors – is there a source of heat

(process heat in the environment, i.e. radiant heat), is it humid in the environment that's going to prevent the body from effectively cooling, and what is the basic temperature. That does not seem to be too much to ask and this language may need to be more specific or in appendix A explain what does WBGT mean or what is the accuracy of the instrument we're asking people to have. The minimal requirement to assess the sources of heat and for a lot of employers there's not going to be much to do. For some employers, the employee that's driving around in the parking enforcement vehicle has no source of protection from heat, either indoor or outdoor, so we need to figure something out for that person – a break schedule, etc. But you can't figure out what you need to do until you assess what the problem is. She supports having this section whether it needs to be modified to say exactly what we mean or not.

Christina Juarez stated that we may want to put something in more general to start section (d) like we do in other standards to make an overall general statement such as employers are required to identify heat stress hazards in the workplace and the steps underneath it can be how to perform that assessment or how to identify the hazards.

John Robinson, California Attractions and Parks Association (CAPA), stated there needs to be some acknowledgement in these regs that not every workplace, not every work job and situation can be comfortably cool at all times. He was a cook in a fast-paced high end restaurant. Three employees put out 750 dinners a night and it was a very tense environment. You can't cool that environment down with blowers and fans and still produce quality food. It's a job that requires some exposure to heat. Some jobs will require that, such as in foundries and manufacturing. There has to be some acknowledgment that you may have a standard that it's desired if it's practical, if it can be achieved, if it doesn't destroy the business. When people work in those environments, they're trained and they know what they're facing and that should be acknowledged in the regs.

Nicole Rice, California Manufacturers and Technology Association, echoed John Robinson's sentiments. They are an industry where they have facilities that have radiant heat and she pointed out there are employers in California who are providing and making sure that their employees are healthy and safe and taking the necessary steps to ensure that in the workplace. She's heard from her members as they've looked through this language and they do not have the sufficient knowledge to interpret what is being meant by some of the statements and the standards that are placed in this first draft. They're concerned because their desire is to be in compliance however they are confused and overwhelmed by the language that has been presented. She believes that we need to take into consideration that every industry in California is not the same and by their very nature of their process they are going to have varying degrees of heat and they need to have flexibility and some feasibility needs to be considered as well as the cost implication in their ability to comply. Amalia asked Nicole if some of her members could provide the Division with suggestions on what methods they've used successfully with people who have radiant heat sources. Nicole replied that she will take that back to her members.

Bruce Wick understands this is a complex issue and affects 750,000 employers. The idea of every hundred dollars is eighty million dollars in the reg so we need to keep that in mind. He worked in an aluminum manufacturing plant while he was in college and he worked in front of a 1600 degree furnace on a forklift. He worked in the pool where that material went into a 1200 degree boiler that he was working in front of, but his biggest exposure to heat illness was on the other side of the plant with the rolled aluminum when it came down the work intensity to put together and band a pallet of aluminum once it rolled off. That we can measure we still have to figure out what we can do to identify your more serious areas of heat exposure. This is just

some of the complexity we need to comprehend multiplied by that number of employers who will then have to respond to this.

Cynthia Rice also remembers having participated in the outdoor heat standard advisory meetings. One of the recurring themes they heard was that it's too general and that there are so many specific applications that aren't being addressed by this general standard. It seems that the Division has gone to great lengths to try to make this a standard that allows for its application to diverse workplaces and that's a good thing. There are some language changes and usages that may be confusing and what we ought to be doing is focusing on clarifying this standard so that it incorporates and embraces the development of the technology that has taken place since we did the heat standard, which allows for more accurate determination of when those risks are using a scientific measure. She echoed the prior comments allowing employees and employers to sit down and work together using these general criteria with specific guidelines to identify the risks and to address them in an individualized manner. She thinks that's what this standard does and that as we go through the process she hopes that people will provide comments about how to make it more usable rather than suggest that it is too complex and that it can never accurately address the workplaces that we have.

Mike Rehor seconded a previous comment about the wet bulb globe temperature and thinks it's an important measure and that there's new science that helps it become more readily available. He commented about subsection (d)(3) that when the heat stress hazard assessment is conducted at or near the annual high, that's not very clear and implies a one-time assessment annually. Obviously there are a lot of factors typically if you use wet bulb globe temperature, so he thinks it's vague and probably needs to be clarified.

Mike Davis commented on two overlying themes that he's heard. One is the variables that the indoor industry is so vastly different from one industry or one business from another and he remembers those same arguments for the adoption of the outdoor heat stress illness and that our state was so different. He relocated from southern California to northern California and those two climates are night and day different from each other and he heard those same arguments that there are too many variables within the state to make this one standard applicable to the whole state but of course we have made it work for ourselves for the outdoor industry. So he doesn't see the variables being vastly different in the indoor industry as well. The second theme he wants to comment on is the complexity. He's risen to the education level of an associate's degree and he's following along just fine. He hears the same arguments by employers all the time that the outdoor heat stress policy is too complicated and there are too many variables. But we still find a way to figure it out and make it work so he urges the Division to stay its course.

Luisa Gratz stated that she's been in the circle twenty years ago trying to get a heat standard in California and that it's only required because of very few people who are employers that don't understand what they go through as workers. For many employers it's always about the bottom line and she understands that because she runs the union and has a bottom line and she also has a unionized workplace. She's disappointed to hear these old arguments and we can't continue to go into the future together and have old arguments and have people die on the job and get sick on the job. We need to stop nitpicking this to death and move forward.

John Robinson worked very closely with Len Welsh for a long time on outdoor heat stress. To say that it was one reg that fit all industries is not accurate. They worked very hard to have enforcement documents for the theme park and amusement park industry because it was pointed out that working in the field in agriculture, working in construction paving the road is far

different than working in a theme park where you have misters, plumbed water and access to shade. There are significant differences between types of work, heat stress loads in that work and they have always felt that these regs, both indoor and outdoor, should go where they're needed and not be overly prescriptive in situations where they don't really make much sense. They urge the Division to look back at the process for the outdoor heat stress regs and recognize the fact that there are distinctions, separations and focus and go where the problem is that is needed to be fixed.

Kevin Bland stated that he's been through a lot of these over the years. There hasn't been one employer here that got up and said we don't need a regulation to cover things, but you also haven't heard one employer attack another's opinion. He hopes that this doesn't deluge into an "us and them" because the whole idea of this is to be a collaborative effort to work together. Just because we have different opinions doesn't mean that one's wrong and one's right. The idea is to have a collaborative effort to come up with a good regulation. He has also litigated appeals on the outdoor heat regulation so it isn't as perfect as everyone thinks it is.

Marti Fisher stated that she's been to many of these advisory committees and we need to be respectful of each other and doesn't appreciate not being shown the respect to participate and the respect of their comments. They are sincerely here to participate and to help come up with a regulation that we can all live with and expect to be shown that type of respect for their thoughtful participation and their comments. **Eric Berg** thanked Marti and stated that the Division respects her comments.

Amalia Neidhardt clarified that the Division welcomes everyone's comments and requested that if anyone thinks of a comment after the meeting to please email it to her. She then moved the discussion on to the next subsection (e) Rest and Hydration. These requirements on access to potable drinking water and preventative cool-down rest were taken from Section 3395.

Kathleen Roberts asked if there could be a clarification for a cool-down area and how far they can travel for a cool-down rest. She has certain instances where for example there is a corrugated steel warehouse that has walls on three sides and open on the fourth but she has basic temperatures reaching 105 degrees where workers sit and they try to get them fans to cool them down but they have nowhere to go that's air conditioned within a reasonable distance because they're in the middle of a parking lot. She asked if there's a certain amount of time that is acceptable, a couple of hours working when it's 105 degrees inside, or should precautions be purchased so that they'd be able to cool down.

Kevin Riley stated that LOSH had done training a few years ago with agricultural workers and construction workers around the outdoor standard. One of the issues they encountered was that people didn't want to drink as much water because that meant they would have to step away from their jobs to have restroom breaks. In case of agriculture that might have undermined people's ability to earn because a lot of that is piecemeal work. In other cases they might have had situations where the employer was not allowing them to step away. He likes the language about encouraging frequent water use but there should also be language explicitly about employers providing restroom breaks for people when they need it.

Anne Katten stated that it's very important to specify that the water needs to be cool and as close as practicable because she has spoken with indoor workers who have to go too far to get water and that impedes adequate hydration. She commented that in subsection (e)(2), it's important to specify that rest or cool-down area is required and we need to have a definition of

an adequate rest and cool-down area. She realizes that configuration will vary from place to place, but she believes that it's important to specify that and they will provide more detail.

Nicole Marquez echoed the comments of Anne Katten and Kevin Riley about rest and hydration being the key to helping workers stay safe and healthy while working indoors. She suggested including language about what they've heard employers do such as charging workers for water, forbidding them from carrying water or being able to take a break to drink water because it's too far or being retaliated against for taking cool-down breaks or drinking water. She stated that cool drinkable water should be provided to workers without retaliation and workers should be encouraged to drink water. They've heard from restaurant line cooks who report that a combination of a fast work pace and being short staffed and poor management practices like favoritism add up to strict rules about hydrating while working. Some workers are even penalized for drinking water while working. Many workers have shared with Restaurant Opportunities Center (ROC) that the ability to cool off with clean drinking water without being harassed to get back to work is essential. They've also heard of workers not having access to cool areas to take breaks so this is problematic. They encourage the advisory committee to look at language that encourages workers to take breaks but also requiring employers to provide those cool rest breaks. Defining what a cool rest area looks like is important.

Christina Juarez asked who would be doing the monitoring in the language that "an individual employee who takes a preventative cool-down rest shall be monitored." This implies that the monitoring is done by the employee and the employee can express if they're having any experiences of heat, but if you work in a retaliatory work environment no employee is actually going to self-describe that they have heat illness even if they're actually experiencing symptoms. The language should have some way of somebody else stepping in saying no you're not okay. Who's the person who is going to bring reality to this because she reads this as an employee in a bad work environment is going to say I'm not experiencing symptoms and I'm ready to go back to work even though anybody who's trained in heat illness will say that person is in heat stress and cannot return to work and she thinks there needs to be language around that. She also asked about any language around returning to work, so if you're a good employer and your employees have expressed having any symptoms and they want a break, do we just let the employees tell us when they're ready to return to work or can she set a work rest cycle if you self-identify that you need to take a break. She doesn't want to order them but she does need them to eventually go back to work.

Mike Davis works for AT&T outside and PG&E is one of the shining examples in the utility industry as far as encouraging proper breaks. He saw a crew of about 15 workers and somebody was monitoring the clock and when the clock hit the right number he stopped everybody, they got out cold water and Gatorades and passed them out. He made everybody stop what they were doing and take a hydration break. There were even workers up on the pole and it wasn't feasible for them to come down but they had hand lines they tied on to buckets and put some liquid in there and pulled it up the pole so they could take a hydration break. He would like to see stronger language in the encouragement by employers and that better defined. Some employers don't understand their role in that. AT&T recently had an OSHA citation for failure to monitor during a heat stress illness. He would also like stronger language around monitoring.

Eric Berg thanked everyone's input and moved the discussion on to subsection (f) First Aid and Emergency Response, which is also taken from Section 3395. It requires employers to establish effective first-aid and emergency response procedures for responding to signs and symptoms of

possible heat illness, including but not limited to first-aid measures and how emergency medical services will be provided.

Luisa Gratz stated this is a critical section of the proposal. What they've done in several of their shops with the cooperation of those employers who are willing is that they've had CPR and first aid classes. It requires biannual certification and they taught their safety committee and people on each shift, depending on the size of the company and the workforce, to be first responders. They realize there are HIPAA requirements so there are limitations on what they can do. They had a situation where a person was struggling with the heat and he called his wife and told her that he didn't know if he would make it through the day and ended up having a seizure and dying on the warehouse floor. The employer initially said don't touch him, he's a liability. Had they had the skills by the time that 911 came they may have been able to revive him sufficiently to live long enough to get to a hospital. At some point you're going to have to involve the workforce in some training. You can't just depend on a supervisor who might not be available or lead person. This program can only work if it's a collective effort where you take care of each other. It could also be the supervisor having a problem with the heat and somebody else has to respond to save his or her life. She believes this needs to include some first aid and CPR response.

Kathleen Roberts asked if there will be a section specifically for workers that work alone. They can have communication measures such as phone calls and radios but if they're incapacitated, they're incapacitated and there's no way of monitoring that. If there can be something along the lines where you can address the fact that you do have workers that are by themselves routinely throughout shifts as well.

Veronica Alvarado thinks that employees should take part in this piece and needs to be included in the heat illness prevention plan. They had a worker in a warehouse who fell ill at the back of the warehouse and the employees didn't know what to do. The worker passed out, they called 911, and the ambulance came to the front of the warehouse. The front of the warehouse didn't know what was happening and sent the ambulance away so 911 had to be called a second time. Because there was no plan and because the workers didn't know what their role was, it took a second call and almost ten minutes and if this had been a more severe situation the worker could have died. So workers need to be involved and needs to be part of the heat illness prevention plan to involve the workers as part of worker committee response teams.

Nicole Marquez echoed the support of involving workers in the development of first aid and emergency response. It's really critical to have clear goals and responsibilities for first aid and emergency response. It's equally important for workers to be trained on who's responsible for implementing the first aid or emergency response. This is particularly true for temporary and contingent workers who may become shuffled around from the host employer to the staffing agency. The last thing you want to have happen is a worker confused about who they need to report to while experiencing a serious heat illness incident.

Mitch Seaman echoed the previous comments about the importance of involving workers in this. One of the reasons they worked so hard on this bill was to give employers that want to do the right thing some guidance as far as best practices they can engage in to reduce the hazard of excessive heat stress. One of the cases that inspired this bill had to do with a worker who was showing symptoms of heat stress and was sent to drive himself to go seek medical care. Giving that employer the benefit of the doubt that they didn't know that it's not a good idea to put someone behind the wheel when they're suffering from symptoms like this, it might make sense in here something along the lines of those workers shouldn't be directed, if they're showing

symptoms enough to warrant a first aid response, then they shouldn't be driving themselves home or they should be strongly discouraged from driving themselves home or to seek medical care. This helps them learn that it's a really bad idea to put a worker behind the wheel when they're suffering from these injuries.

Gail Hayden, California Farmers' Markets Association, stated they see a lot of heat illness on a regular basis out in the market situation. One of the things they notice that it's not necessarily employees but also market attendees. The first thing they do to respond to first aid is to look at the clothing. There are people who come out on a 100 degree day wearing a trench coat. Or there are a lot of workers that want to stay out of the sun and the garment they pick doesn't breathe. So the first thing they do is look at the garment situation, what are they wearing, and a lot of times just getting them out of nylon or a fabric that doesn't breathe is responsive. It's not just water; it's not the only first aid. Also, one of the conflicts they have with heat illness with their employees in a farmers market situation is the incompatibility between the laws of worker safety and environmental health laws. They'll have somebody doing kettle pop or roasting chickens or being over barbecues and the health regulations superseding that require them to be surrounded in tarps that don't breathe and they're in a situation where there's too much heat. That's where they've had two of their near death situations. She's asking if a procedure can be added for the environmental health department to review the policies the Division is putting forth and make sure it's compliant with what they're doing.

Bruce Wick stated that we're going to be in a regulatory process for a while. California has 19 million workers and a high percentage is indoor and are there things we can learn from this process to do some education to get out to employees, for example, about clothing. Those kinds of things we know, can we start educating employees because they can from the bottom up enforce the employers that aren't as cooperative while the good employers can do it from the top down. If we look at this during our process, how can we educate workers, we have a lot of vehicles to do that – through the Division, through Consultation, through social media and other ways. Let's not wait until we get a regulation to start educating workers and employers about this. Regarding the emergency action plan, we're making a small change to the guidelines and what a great opportunity to emphasize to all employers the importance of an emergency action plan so that they can rethink that. It's not one of the usual things their advisors or consultants say. The first thing is let's avoid violations when an emergency action plan is a huge part of what you're doing to protect workers. Can we, along with this change in the emergency action plan reg, and not waiting until we're done with this reg, say to employers this is a really important thing, rethink it and at the education part talk about some of the things that have been said about workers exposed to heat illness and how we might have saved their lives.

Amalia Neidhardt moved the discussion along to subsection (g) Close Observation of Unacclimatized Employees. She stated that the definition of heat wave comes from Section 3395 and invited stakeholders to comment on this subsection.

Kathleen Roberts asked if "closely observed" could be defined.

Luisa Gratz stated there needs to be some observation system set up, a buddy system. You can't always put this on a supervisor because they're not always available and they're also working and they have their own responsibilities. So somebody has a problem and they don't know about it and there's no way they could have known unless they're told. You have to have a system in place instead of putting the onus on a manager or designee. It depends on the size of the workplace and the type of work being done and if the supervisor may also be a worker. She

suggests an alternative to putting one person in charge or designee. She doesn't think it will work.

Nicole Marquez stated that Worksafe supports the inclusion of this section that's especially important for new workers, temporary and contingent workers. For example, workers that are transferred from one department to another where heat is an issue are at greater risk for heat illness because their bodies haven't yet acclimatized to the heat so they need to be closely watched. They also agree there needs to be some type of system of observation. She envisions a system that does not penalize workers or supervisors for speaking up if they see somebody who is experiencing a heat illness incident.

Anthony Arceneaux questioned the unacclimatized rates. In their plant they only work 14 days in a month and it's all rotation with days off and days on so they'll never be acclimatized to the heat based on this standard. They would like to see more calculations of the rates. For the supervisor or designee, need more clear language about the designee has to be trained in the first aid aspect or predetermined prior to the start of the shift because he wouldn't want to run into a situation where you're working alongside an employee and you've never been trained to look for heat issues and the employee drops right next to you and your supervisor comes up to you and says you're supposed to be watching that guy. If you're going to be designated you're going to need to be trained before.

Eric Berg moved the discussion to subsection (h) Short-Term Exposure Limits. It sets up maximum heat exposure levels to employees although in the next subsection it says only where feasible so there's feasibility built into this. It separates radiant heat exposures versus non-radiant heat exposures and acclimatized workers and unacclimatized workers and also separates activity levels.

Terry Thedell stated that both of these tables gives us a clothing adjustment factor, a fudge factor, ranging from 5 to 25 degrees Fahrenheit and that's understandable. However, there's only 2-3 degrees difference between the two tables just based on WBGT so he suggests doing away with the WBGT measurement and just giving it a fudge factor, to give radiant heat a fudge factor of 2 or 3 degrees and dispense with all the problems with the measurement. **Eric Berg** replied that the National Weather Service when they do their heat index, they say this is for exposures with no direct sunlight and they say add 15 degrees if you're in direct sunlight. Terry said think of the expense and trouble that people will go through trying to derive a sum of WBGT values when we're only talking 2-3 degrees difference.

Deborah Gold stated that she didn't understand it the same way as Terry Thedell because you're making WBGT measurements when there is a radiant heat load and you're looking at the total heat load here. She doesn't understand the basis for the difference between them since WBGT is taking account radiant heat. She doesn't understand the basis for the difference between table 2 and table 3 in the trigger temperatures because the WBGT should have already taken into account the radiant heat. The TLVs talk about work rest cycles under different temperature and work activity levels and she's been trying to correlate these tables 2 and 3 with the table from ACGIH which is also used by the military and everybody else. She doesn't understand how these tables are meant to work. She gets the value of a one hour short term exposure limit in terms of it being easily observable and measurable but she wants an explanation of the basis of these tables and what they're meant to do.

Eric Berg replied that if you're under these limits then you don't have to do any work rest schedules, just comply with the other parts of the standard. If you're above these limits, you can

do engineering controls or to reduce exposures or you can do the work rest schedules. There are different ways to get underneath these numbers. Deborah stated that she understands that but she doesn't understand the concept of time weighted average and how that would be calculated because it's not really a time weighted average so much as it is an activity temperature time weighted average. Eric stated that's why it's just based on one hour. Deborah replied that if this concept is to be used it needs to be explained more how the calculation works. Eric replied that time weighted average is probably not the best word. Deborah agreed and stated that it's really work temperature activity and that what you're trying to get at is if you're doing heavy work and it's over 80 degrees for acclimatized or 77 degrees for unacclimatized, you can't do it for a full hour.

Nan Jiao pointed out for Minnesota's indoor heat stress standard they only combined work load with WBGT. They didn't measure acclimatized or unacclimatized, however their temperatures threshold is based on unacclimatized employees. Maybe we can learn from them and give a more conservative threshold based on unacclimatized workers. She also pointed out in table 2 first row, Sum of WBGT Values and Clothing Adjustment in Degrees Fahrenheit, it sounds like you have to read the WBGT number and add the clothing adjustment factor but it's not supposed to be calculated. If she's wearing heavier clothing, her threshold should decrease. By reading the table, if she's doing light work and acclimatized, wearing normal cotton clothing then it should be 88 degrees. But if she's wearing a cover up that has 5 degree Fahrenheit clothing adjustment factor, she should do an equation by 88 degrees – the clothing factor. That's how she understands the ACGIH TLV booklet.

Conrad James, Basalite Building Products, stated that he has experience as a machine operator and as a forklift driver. When he reads this table and considers his safety coordinators at their plants and machine operators and looks at what they're trying to accomplish, they're moving from measuring product coming off the line to fixing a machine that's broken to cleanup. There's a myriad of tasks. Some examples in this table delineate the complexity what would have happened to him when he was a machine operator, etc. that would be confusing. If he knew that his employer had an obligation to enforce these rules, it would leave some confusion to him. In his position now, he has to consider the cost implications for doing such work.

Anthony Arceneaux suggested to assume that everybody's unacclimatized because it's only a few degrees on the chart, but there are so many factors – your rest days, how much water you drink on your days off, whether you've consumed caffeine, whether you're taking certain types of medication. So you can never really call an employee acclimatized to the heat just by looking at him or setting a standard. It should just all go to the lowest standard which is unacclimatized. Just assume everybody's unacclimatized.

Christina Juarez stated that she does not understand the relationship between the current scope and application that states 90 degree Fahrenheit 80 degrees Fahrenheit when the scope of the standard applies and the short term exposure limits. She's had situations where the WBGT will give you a reading that's relatively close to the ambient temperature and if you adjust for clothing is zero, then you could have a situation where you apply under these short term exposure limit tables for unacclimatized workers 77 or 79 degrees, but those temperatures would not even put you in the scope of the standard. She would already have discounted looking at the short term exposure table because under the current scope she doesn't even apply under the standard. She suggests looking at section (a) scope and these short term limits because you may not be under the scope of the standard but actually have a WBGT that comes out on the short term exposure limit table.

Luisa Gratz commented on the work activity level is stated but not defined and she's not sure what parameters were explored determining what work would be considered light, moderate, heavy or very heavy. In the workplace, people do light work but it's repetitive for 8 hours with the exception of rest breaks and lunch. Then you have people who do not do it for 8 hours but it's very heavy. So the impact of this language will be varied and on a more subjective level. She can imagine people in the workplace saying my job is heavier than yours, therefore I should get etc. etc. We don't want to build in that kind of argument between the workers and their boss, or the workers and each other. We need to find some other way to capture the concept in a more practical way.

Amalia Neidhardt moved the discussion to the next subsection (i) Control Measures. If you're a worksite with high radiant heat, you're going to need engineering controls and if engineering controls are not feasible, then administrative controls. In work areas with other than high heat, it's also engineering controls or administrative controls or a combination of both. She pointed out subsection that in situations in (i)(5) during the period necessary to install or implement engineering or administrative controls, we're going to ask the employer implement the following procedures listed in (A)-(F). You will recognize them from Section 3395.

Mitch Seaman stated that from their perspective this is really the centerpiece of the whole standard and probably the most important one to get right. It could go in one or two directions where it it's too weak then the whole standard is kind of a suggestion, more like guidelines something where an employer could just say I don't think it's feasible and so I'm not going to do any kind of administrative or engineering controls. If it goes too far in the other direction, then it gets too specific. Nothing in here says you shall install fans or you shall install an air conditioning system. As they would much like language that says that, it's not realistic. Getting that balance right is what they think is most important part of this whole regulation. They think this language is really close but it would be good to have something more along the lines of what it says in the outdoor standard with regard to the shade structure where it says the employer can demonstrate that it is infeasible. At a minimum it should be something where if it comes down to a dispute where an employee thinks that it would be feasible to have more engineering controls or administrative controls and the employer disagrees, that there is some sort of requirement that the employer can show that he can't put a fan here because of this, because it would be more safe than not having a fan there. Having language where it just says where it's not feasible, no problem you don't have to worry about it, they think might err too far on the side of language that doesn't sufficiently encourage the employer to take the problem seriously. It would be great to have something else along the lines of what it says in the outdoor standard or something else entirely to more strongly encourage the employer to take a serious look at the engineering or administrative controls that might help keep workers safe.

Kathleen Roberts agreed that the clarity would be extremely helpful because currently if it's okay they have it worded as feasible or impracticable, in certain instances it's absolutely not going to be. She suggested that (i)(6) personal protective equipment, such as water-cooled garments, air-cooled garments, etc., be put in as an alternative for some of the other requirements. If they could have something along those lines, no they can't do the engineering controls and yes they did have to resort to the lowest level of the pyramid, they'll go with personal protective equipment because it's their best option. Do they have to prove that, show that they do supply it, and does it become employee action if they choose not to wear it so that even if they provide training and the PPE for cool down but they can't provide an air conditioner or something along those lines, do they have an out which they said they provide PPE and that employee chose not to wear it.

Veronica Alvarado stated that feasibility is the part she's having issues with. The Warehouse Worker Resource Center interacts with many warehouse workers and they go to work expecting to be able to go home every single day. They go there to sell their labor and be able to return to see their families. To the extent that their workplace cannot be safe for them, then we need to rethink what is happening at their work. There needs to be stronger language that's going to protect the workers and ensure that they're going to be safe at work at all times.

Bruce Jefferson asked to what extent is feasible and if that can be explained. **Amalia Neidhardt** replied that the Division is taking comments to understand which areas can be worked on.

Anne Katten supported Mitch Seaman's comments that it would be helpful to have language where employers have to demonstrate why a control isn't feasible because we need controls for the heat. She also commented on subsection (i)(5) that gives a period to install or implement engineering or administrative controls, there needs to be some kind of a timeline and a deadline there. Right now it's just indefinite and that is not acceptable. She recognizes that some things take longer than others but there needs to be a deadline there. She also commented on subsection (i)(5)(F) for the interim control measure, ensuring that employees take a minimum ten-minute preventative rest period every two hours, is often not going to be adequate if you're a considerable amount above these short term limits. The ACGIH TLVs standard is supposed to be based on specifying much more extensive hourly rest times above the limit to ensure safety of the worker.

Deborah Gold commended the Division for putting in the language on (i)(1) and (i)(2) that says even if you can't reach the short term level that you want to implement feasible administrative and engineering controls to get as low as you can. She thinks that's appropriate and may need to be reworded a little bit to say exposure rather than heat stress, but that's an important concept. She agrees with what Mitch Seaman said about putting the burden on the employer to show that something isn't feasible. That isn't done in (i)(1) and (i)(2) but it is done in (i)(5) so maybe if you look at the language in the sections that we might be able to get to the right point of balance about who can demonstrate feasibility. Often feasibility is something that really only the employer has the information to demonstrate so saying the employer needs to be able to demonstrate that it's not feasible is a fair thing to put into a standard. She echoed Anne Katten's sentiment about (i)(5)(F) that employees need to take preventative cool-down rest period because one of the things they should have been considering is the ACGIH work rest cycle and there's no ten minutes out of two hours in that cycle. The lowest cycle, if you need to use work rest to reduce it, it's a 25% reduction. She thinks (i)(5)(F) needs to be changed and understands that it comes from the outdoor heat standard but if we're already into exposure limits and everything else, it should be consistent with the ACGIH.

Christina Juarez stated this section seems to mimic what's in the hierarchy of controls regulation so she wonders why we don't align them and make statements that say you need to control heat in accordance with the hierarchy of controls because a lot of this seems to mimic what that standard already says, that you have to use engineering, administrative then PPE. She also says that this doesn't mention PPE and they have a lot of heat hazard that is caused by PPE, people wearing vapor barriers or plastics or a lot of PPE load. They actually require that during the rest cycle they strip that PPE off to allow evaporation and that is a control measure they use often, the removal of PPE and that's not addressed in here.

Marti Fisher stated that she wants to make sure that when you are evaluating the use of engineering controls or the requirement, that you're also looking at other requirements that have

to do with the environment, environmental controls like requirements for HVAC usage, energy usage, greenhouse gas emissions, certain building standards and requiring additional controls and how that would interact with other regulations and statutes from other agencies. She also reminded that the cost is going to definitely exceed the major regulation costs and that has to be considered.

Eric Berg then introduced the next subsection (j) Training. It requires initial and annual training. Much of this was taken from the outdoor heat standard, environmental and personal risk factors, employer's procedures, employer's heat illness prevention plan, importance of drinking water frequently, acclimatization, education on all types of heat illness, importance of reporting symptoms.

Kevin Riley stated that it would be valuable to have language about who should be doing the training and specify that it should be someone who's knowledgeable about the facility's heat illness prevention plan. He knows it's built into the content of the training but feels it would be good to include language about who should be doing the training. It would be helpful to have language about training that is targeted for the education level, literacy and language of the employees so that it's explicitly laid out in the standard. If you look at the Cal/OSHA ATD standard, there's language there specifically about the requirement that trainees have an opportunity for interactive questions, and he would like to see that built in here too so it's not just a video presentation. People will have an opportunity to interact, ask questions with a live person who's knowledgeable about these issues, and have a response.

Nicole Marquez stated that Worksafe supports the inclusion of the need for effective training and also supports Kevin Riley's comments around having some language around literacy, culturally and linguistic appropriate training, but literacy definitely should be included. She also spoke of the need to have language around having workers and their worker representatives being involved in the development of the training, the curriculum and its application. Workers and worker representatives are the experts in their workplace and are in the best situation to figure out solutions so it's important to have language around how the training should be interactive, be in person and be dynamic. Worker involvement and the idea of it being interactive is not a new concept and they've seen it required in other standards such as the workplace violence prevention in healthcare standard, the bloodborne pathogens standard, and most recently the hotel housekeeping standard that's in the process of rulemaking. She emphasized the importance of the effectiveness of training and in a letter to SEIU, federal OSHA states that the effectiveness of training is enhanced by trainer-trainee interaction. Although this is not written in all OSHA standards, in assessing the adequacy of an employer's training program OSHA will question employees to determine if they actually understood the training. They want to make sure the onus is not on the worker but that employers are ensuring that the training is effective so that workers know what to do when they need to report a heat illness incident, when they need to recognize when somebody has heat illness symptoms and know what the process is for reporting in an emergency situation. Training should include how to report a heat illness injury and how to contact someone in case of an emergency and more information around workers' rights to refuse unsafe work.

Veronica Alvarado stated that through the Warehouse Worker Resource Center, they participated in training hundreds of workers on health and safety, protections for the workplace etc. so she is happy that this is in here and thinks that training needs to include a strong partnership with the IIPP and the heat illness response program, so that workers understand what they have to do in the event of an emergency, not just how to identify symptoms of heat illness but that they know what are the procedures involved, that the trainings are in their

language at the literacy level of the workers, and that they are not as employees responsible for making sure that heat illness is something that the rest of the employees are free from. Some of the responses that they've gotten when they've done health and safety trainings is that workers say they know how to identify heat illnesses, that's not the problem, the problem is that they can't make the changes that need to be made. As Nicole Marquez said, they need to be practical solutions for changes to be effective at the workplace.

Luisa Gratz suggested adding a worker's right to refuse, you have to put in something that prohibits retaliation because they have situations where the workers complain about not feeling good and they're not taken seriously and they're ordered to continue working. Depending on the personalities of the workers as well as management, there could be retaliation. She commented that (j)(4) the concept, importance, and methods of acclimatization needs to be more clearly defined. It's too general, not everybody can be acclimatized and she doesn't want anybody to say they're not acclimatized so they can't keep their job. We need to carefully address that. On (j)(6) the importance to employees of immediately reporting, there has to be somebody available to report to. There are worksites where managers or supervisors are not always available, so the method of reporting, the means to report, are there telephones or other ways that communication can take place. On (j)(7) the employer's procedures for responding, she's not sure how that would be carried out. If there are going to be trained people, coworkers, somebody should call 911 if necessary or notify the employer. Having to read a long list of things to do in case of is not going to be helpful in an emergency. On (j)(3) the importance of frequent consumption of small quantities of water, some employers don't allow liquids in the workplace so there has to be another way for them to consume the necessary liquids for their health.

Michael Musser commented on (j)(6) the importance to employees of immediately reporting, wants to add "without fear of reprisals or retaliation" so that employees are willing to participate. It doesn't matter what types of regulations we have in place. If people are afraid to act upon it, it's not going to happen.

Amalia Neidhardt reminded the attendees that if they think of something later on to send her an email and moved the discussion to the last subsection (k) Recordkeeping. She briefly described the requirements: (k)(1) records of the most recent heat stress hazard identification shall be created and maintained; (k)(2) training records shall be created and maintained for at least one year. That's similar to what's in Section 3203; and (k)(3) records required by this subsection shall be made available to employees or to the Division upon request.

Bruce Wick asked how long records of assessment should be maintained. **Eric Berg** replied that the standard requires it to be kept forever. Bruce asked if he does an assessment today, 14 years from now he has to make sure that's available. Eric replied that if you do another one after that you can throw away the older one, just keep the most recent one. Bruce asked if he should keep the most recent one for each workplace that he has. Eric replied in the affirmative.

Deborah Gold stated there are places in this standard where it would be good to clarify the relationship with section 3203 and section 3204. You say that it can be a part of the IIPP under 3203 but you don't actually reference the other requirements. It would be useful to put in a note that says there are additional requirements in 3203. There are those recordkeeping exceptions in 3203 that you may or may not think are relevant to the standard. They may not be and we don't carry them through on all the standards. Where it says this shall be made available upon request, we haven't given a timeframe or time period for that. Some of these things are employee exposure records and are susceptible to 3204 requirements of access to employee

exposure and medical records. You may want to clean up the recordkeeping section and other sections and make it clear how they relate to these other standards that we already have.

Nicole Marquez suggested that in addition to (k)(1) records of the most recent heat stress hazard identification and assessment and the control measures used by the employer to reduce heat stress shall be created and maintained, she would also like to see if the employer adopted measures to correct whatever the heat stress hazard caused. "Used" implicates that this is information from the past so that anything that is done in the future to remedy what has happened in the past should also be included. She suggested in (k)(3) adding that these records shall be made available to employees "and their representative."

Conrad James stated in (k)(3) all records being made available to employees, it would make more sense if that was to areas where he was exposed to, not the records where he's got you working at a certain place. As an employee, he shouldn't get all the records that hasn't impacted him, so some language that supports that idea is needed.

Amalia Neidhardt then moved the discussion on to Appendix A. **Eric Berg** explained that Appendix A is the heat index table which is a chart. He said that there are phone apps that you enter the relative humidity and the temperature and it automatically calculates the heat index for you. The instruments that you buy automatically calculate heat index as well, but this is just an alternative that shows you the heat index based on temperature and humidity. It's on the National Weather Service website, as well as Fed OSHA's website.

Steve Smith asked for any final comments. He recapped the meeting and stated that we got a lot of constructive comments today and we're going to go through those. He encouraged attendees to provide actual language changes to the discussion draft along with feasibility concerns and email it to Amalia for the Division to consider. We'll be accepting that additional comments by email up to the end of March and then we'll try to revise this draft based on the comments we heard today and supplemental comments we get through March. Then we'll schedule a second meeting for southern California realistically in May or June. He asked if there are any areas in southern California that the attendees are interested in us holding the meeting. Many responded they would like it close to an airport, and preferably Ontario. Amalia reminded attendees that if they know anyone who didn't get an invitation to the meeting, pass the information to her so she can add them to the stakeholder email list. That way once we select a date in May or June, we can make sure that everyone gets notified. Someone asked when the minutes will be out. Steve replied that we don't have any set time but we will try to get the minutes out and posted on the website for this project before the next meeting. Steve thanked attendees for coming and then closed the meeting.