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ADVISORY COMMITTEE - ROUNDTABLE MINUTES
Residential Construction Fall Protection Trigger Heights
November 3, 2015
Safety Center of California
Sacramento, California

Opening Remarks

The meeting was called to order by Chairman (Chair), Michael Manieri, Principal Engineer, Occupational Safety and Health Standards Board (Standards Board) at 9:30 a.m. P.S.T. The Chair was assisted by Ms. Bernie Osburn, Staff Services Analyst, Standards Board. Also in attendance was Ms. Marley Hart, Executive Officer, Standards Board. The meeting opened with self-introductions of members and interested parties but was preceded by recognition by the Chair of representation by both Federal Occupational Safety and Health Administration (OSHA) and the Division of Occupational Safety and Health (DOSH).

Background of the advisory committee.

The Chair reviewed the Standards Board policy regarding the use of advisory committee (committee) meetings and emphasized that the meeting was somewhat of a departure from the more traditional committee meetings in that there is no proposal to deliberate over. The meeting is intended to provide stakeholders an opportunity to express their support, concerns, objections and recommendations with regard to whether or not Title 8 construction standards for residential framing require amendment to render California commensurate with Federal OSHA as far as fall protection trigger heights are concerned. The Chair explained that amendments would impact California's existing 15 foot (framing), 20 foot (roofing) and 7½ foot (general fall protection) trigger heights.

To clarify to the committee the series of events leading up to the meeting, the Chair presented a timeline of significant events at the Federal and State levels going back to February 6, 1995, the effective date of the Federal Subpart M construction fall protection standard. The Chair stated that Board staff's position on this matter is one of neutrality to the extent that the Board is committed to providing clear, enforceable, effective standards that will safeguard employees against falls from elevation and at the same time meet the statutory obligation described by the California Labor Code to adopt standards that are at least as effective as those promulgated by Federal OSHA.

Particular noteworthy historical events recounted by the Chair:

- The promulgation of the Federal Final Rule for Construction Industry Fall Protection, 29 CFR 1926 Subpart M became effective February 6, 1995, but was suspended by Federal

compliance directive STD 3.1 on December 8, 1995, suspending the requirement that residential homebuilding employers comply with the 6 foot fall protection trigger height and allowing employers to implement alternative fall protection and work procedures, such as use of a fall protection plan which allowed no shoring of infeasibility of conventional fall protection, the plan did not have to be in writing and did not have to be job-specific. Such allowances were never permitted in California.

- On December 12, 2010, Federal OSHA cancelled Directive STD 3.1 and replaced it with STD 03-11-12. The effect of this cancellation was to require residential construction homebuilders to comply with the 6 foot trigger height for fall protection stipulated by 29 CFR 19126.501(b)(13). Federal OSHA notified California on May 28, 2013, that they had begun the process of reviewing all of the corresponding state plan standards, policies and procedures governing fall protection in residential construction. The Board's response to the May 28, 2013, letter from Federal OSHA, noted that the Board was aware of a Federal notice of public meeting to discuss residential fall protection in which Federal OSHA stated that state plan states are not required to mirror the federal standard but must include the goal of reducing workplace injuries, illnesses and fatalities.

- In a letter dated February 4, 2015, Federal OSHA disputed the effectiveness of California's residential fall protection standards. In response, Board staff began the process of opening a dialog between stakeholders, DOSH and Federal OSHA in hopes of resolving the issues raised by Federal OSHA.

The Chair announced there would be three presentations: one by Federal OSHA, one by DOSH and one by Bruce Wick and Kevin Bland representing framing contractors. The Chair also explained that each presentation would be subject to questions by committee members. At this point, the Chair announced the first presentation.

<u>Presentation by Mr. Jordan A. Barab, Deputy Assistant Secretary and Mr. Dean Mckenzie, Deputy Director, Directorate of Construction, U.S. Department of Labor, Occupational Safety and Health Administration.</u>

Mr. Barab stated that falls in construction remain one the biggest causes of injury and death and this is an issue of great importance to Federal OSHA. The State is required to have standards for all issues addressed by Federal OSHA that are at least as effective as those of Federal OSHA. Mr. Barab commended the State program for promulgating standards that are often more effective than Federal standards and cited a few examples. Mr. Barab stated that there is one area that Federal OSHA believes California lags behind almost every state and that is in the area of residential fall protection. The Federal 6 foot trigger height as stipulated by 29 CFR 1926.501(b)(13) appears more effective than California's 15 and 20 foot trigger heights for residential construction and associated roofing work. Mr. Barab cited statistics that 25% of fatal falls occurred in residential construction between 6 and 15 feet. He confirmed the statements by the Chair that there was a suspension of fall protection requirements following the promulgation of the Federal Final Rule Subpart M, but since 1995 there have been numerous technological

advancements in fall protection that make providing positive fall protection means for residential builders feasible.

Mr. Barab stated that Federal OSHA has received testimony from residential home builders stating there are means and methods available that make providing fall protection at heights above 6 feet feasible as required by 501(b)(13). Subsequent Federally held hearings have indicated little or no resistance by home builders nationally to the resumption and enforcement of 501(b)(13). Mr. Barab stated that 20 of 27 state plan states made changes to their existing fall protection standards bringing them to at least as effective status with the federal standard, leaving seven who did not. Of those seven, Federal OSHA has reached agreement with five states, leaving two states, California and Washington, not in compliance with the 6 foot residential construction fall protection trigger height. Mr. Barab stated that Washington's deviation from the Federal standard relates to their use of the fall protection plan which is not in line with the 27 other state plan states. Washington is apparently working to come to terms with Federal OSHA to resolve this issue.

Mr. Barab stated that the process has been amiable except for Arizona where Federal OSHA had to resort to the possibility of disapproving Arizona's state plan and implement concurrent jurisdiction over all construction operations including residential construction before Arizona agreed to change their standard. Mr. Barab explained the process of how federal OSHA determines whether a state plan state standard is at least as effective as the federal standard. Essentially, Federal OSHA protocol requires each state plan state to implement standards that will be at least as effective as those promulgated by Federal OSHA for each workplace issue. The protocol also requires each state plan state to make changes to their programs when Federal OSHA introduces a new standard that is not addressed by the state plan. Mr. Barab made reference to previous correspondence between Federal OSHA and California stating that the state plan program was not at least as effective as the Federal with regard to residential construction fall protection. Federal OSHA was happy to be at the advisory committee meeting to help begin the process of bringing California in line with Federal standards.

Mr. Barab stated that he wanted to clarify that incidence rates and accident data are not dispositive in determining the effectiveness of standards. He applauds Cal OSHA for achieving a fatality rate that is below the national rate; however these rates are not conclusive evidence of an at least as effective program. They are only useful in determining trends but not effectiveness. Mr. Barab concluded by stating that it has been almost five years since Federal OSHA made the changes to its federal standard on residential fall protection. California has been on the forefront of occupational safety and health more than any other state and he believes California does not want to be on the lagging edge of occupational safety for this issue. He expects California to find a timely resolution of this problem. Mr. Barab was accompanied by Mr. Dean Mckenzie who would talk about technical issues.

Mr. Bob Raymer representing the California Building Industries Association asked Mr. Barab to revisit the part of his discussion about the consideration of California residential fall protection accident and fatality data versus the national experience. Mr. Raymer stated that if he was

hearing Mr. Barab correctly while Federal OSHA applauds and recognizes the lower California fatality rate, it appears that such statistics are not being considered. The depth of the California data seems to show a substantial reduction in fatalities. These statistics are apparently not part of the federal equation in determining whether California is at least as effective as the federal standard and Mr. Raymer wanted to know why.

Mr. Barab addressed Mr. Raymer's question in three ways. Looking at falls in the 6 foot-15 foot span, gravity is gravity no matter where you are in the country. Secondly, the law requires Federal OSHA to do their comparison of standards to determine effectiveness on a standard-by-standard basis and thirdly, it would be chaos for Federal OSHA to base a finding of effectiveness on statistics for a given year or group of years as some states perform better some years versus the federal and some perform worse. It would be impractical for Federal OSHA to base effectiveness on any given set of statistics and it may be illegal (in conflict with the Federal OSHA Act).

Mr. Raymer stated that he hopes his comments were not misinterpreted by Federal OSHA. The fact that California has a fatality rate that is well below the national average does not mean California should not have standards when, in fact, California does have standards that appear to be effective. Mr. Raymer stated that after having attended many building conferences around the country, the national perception by home builders and persons in the residential construction industry is that California has among the most stringent standards for residential fall protection and at one point they were concerned that Federal OSHA might adopt them nationally. California's standard is clear, stringently enforced and black and white in terms of what is required of the employer and that in many other states the fall protection plan is grossly overused. Mr. Barab stated that Federal OSHA recognizes this and encourages states to be more effective than Federal OSHA but there are issues that must be resolved for any given state plan state to be approved as being as effective.

Mr. Barab stated that notwithstanding all of the enhancements and perceived effectiveness of the state standards over the federal standard he does not see how the State can argue that allowing workers to fall 15 feet is as effective as the Federal standard that allows workers to fall 6 feet.

Mr. Mckenzie would like to discuss some statistics and mentioned that in the Bureau of Labor Statistics (BLS) occupational illness and injury statistics California is one of the states that is above the national average in terms of rates and that not all falls between 6 and 15 feet are fatal although they certainly can be. In fact 25% of the falls less than 15 feet are fatal. Mr. McKenzie stated that when you consider the housing starts in California (with California representing about 10% of the nation) fatality numbers as a function of housing starts, supports the finding that the State's accidental fall rate is above the National average. In a year like 2009 when there were 31,000 California housing starts, the fatality rate was low, approximately 10 fatalities were recorded. Since then, housing starts have increased and so has the fatality rate. Rates vary from 8-10% from year to year. To say that things are looking good in California with regard to the statistics is misleading because as the California economy continues to build steam and recover

California will see an increase in fatalities if the standards are not amended to mirror Federal OSHA.

Mr. McKenzie indicated that Federal OSHA is concerned over a number of issues besides trigger height. For example, use of the fall protection plan does not necessarily equate to a lower level of fall protection safety he has seen a number of well-done plans that are very effective. He stated that fall protection plans must be job, site, and condition specific for one area of the structure. Federal OSHA also struggles with the state's exemption for the term "short duration" since it is a challenging situation. Having it in the fall protection standard without a definition and conditions does not appear to be commensurate with federal standards. The use of slide guards is another area of concern as they can be useful on a steep pitch roof, they can also be a tripping hazard and they will not prevent one from going over the edge to the level below. He emphasized slide guards are not restraint and they are not positive fall protection. Mr. Mckenzie stated those are some of the issues of particular concern to Federal OSHA. Mr. Mckenzie then mentioned what appears to be a contradiction to an earlier statement he made regarding the percentage of falls that are fatal between 6 foot -15 foot. By the BLS numbers 10%-14% of falls between 6 foot -15 foot have been fatal falls in construction.

Mr. Tom Shanahan stated that he expressed to the Federal Advisory Committee for Occupational Safety and Health (ACOSH), which was convened to discuss residential framing issues following the rescission by Federal OSHA of STD 3.1, the fatality/injury rates would climb. While Federal OSHA has cited and relied upon a number of statistics to support its position, it dismissed them at the same time when quoted by the State. California has an injury protection program requirement which federal OSHA does not. California standards take a more concerted risk management approach to the fall risk issue by looking at the nature of the operation and roofing system being applied, slope of the roof, working surfaces and then apply a set of menu options as provided in the State standards.

Mr. Shanahan stated that the fall numbers in states that follow the federal standard are getting worse. He warned Federal OSHA during the ACOSH proceedings that taking away roofing contractor options would result in an increase in falls. Merely looking at the falls between 6-15 feet does not tell the whole picture. As California looks at the data, we see that, for the Nation as a whole, no one is using fall protection. Therefore, the issue is not the height; the issue is that people are not using fall protection. We want them to use fall protection and we want to give them options that are useable and feasible. The availability of varying trigger heights and other options as provided in California makes sense from a risk management perspective. California standards are after risk reduction so that workers don't fall off roofs by better ensuring that some form of fall protection such as a slide guard is provided even though it may not be perfect. Based on experience, we realize it won't prevent a fall from the roof but it will greatly reduce the chances of a fall to the level below. It is something that might be completely absent from the site if a 6 foot trigger were imposed without options. A fall arrest system combined with a 6 foot trigger height will not work, employees will hit the ground before the rope grab engages. He does not understand why Federal OSHA was looking at only one factor, namely the trigger

heights, and pinning everything on that to prevent falls from elevation. As a trained and experienced safety professional it does not make sense.

Mr. Barab responded by stating Federal OSHA has no problem with a risk management, Injury and Illness Prevention Program (IIPP) approach per se, but Federal OSHA views the IIPP as a supplement not a substitute for positive fall protection otherwise we could get rid of all standards and let employers have at it using their own prevention methods and accept their own level of risk. Federal OSHA is not going in that direction. Without going into details on why Federal OSHA picked the 6 foot trigger height, he pointed out that Federal OSHA developed an extensive record on this particular issue. Federal OSHA is not solely focused on the height, but the world has lived with it for quite some time. Mr. Shanahan stated that reasonable people need to sit down as we are doing today to air our concerns and have a meaningful dialog directed at solving problems.

Mr. Mike Donlon stated that as a former employee of the DOSH he conducted numerous construction sweeps, and it was clear that existing fall protection standards were not working, and "we were trying to ram a square peg into a round hole." He stated that DOSH was active in issuing many citations to residential home builders but also stated that under the old standards, were not really improving anything. The 15 foot trigger height applies to a very small portion of the residential construction exposure; most everything else must comply with the 7.5 foot trigger height. The options that were developed when the Guidebook for residential construction was put together by DOSH and stakeholders employed the use of bracket scaffolds and other options resulting in a paradigm switch in the residential construction industry culture that brought the fall rate down and made the jobsite safer.

Mr. Mckenzie stated that is a wonderful change; it is a good thing for California to be able to get consensus agreement on how best to address the fall risk. He stated that while Mr. Donlon notes the narrowing of the risks reflected in the 15 foot trigger height, they still exist and must be addressed per the federal standard. Mr. Mckenzie stated it is not that big of a transition to get to the 6 foot trigger height given the existing tools in the Cal OSHA toolbox.

Mr. Mitch Seaman of the California Labor Federation stated that we should not get overly hung up on the data because the data shows workers are still falling and being injured or killed and this tells us there is still more work to be done. We all should endeavor to make the standard as protective as possible. We cannot rest on our laurels on protecting workers so long as workers continue to die or become injured simply because we are trending in the right direction.

Mr. Shanahan stated that he could not agree more with Mr. Seaman; however, the 6 foot trigger height is not the answer or magic bullet. California has 700,000 workers and Texas (a Federal OSHA state) has 670,000 workers; there were 47 construction deaths in California, and there were 105 in Texas; that is a very significant difference. We have to look at averting falls in a way that is more holistic. Mr. Shanahan reminded the committee that the 15 foot trigger height was created for the residential, production style housing construction process.

Mr. Kevin Bland representing the California Residential Framing Contractors Association stated, Federal OSHA is getting hung up on the numbers and not the discreet steps or processes that go into the framing, trussing, joisting, and sheathing of a residential home for which a specific trigger height has been developed.

Mr. Brian Taylor, representing the Southwest Regional Carpenters, stated he was fortunate to be involved in the development of the California fall protection standards for residential construction. The carpenters emphasized hands on training for their members which resulted in great strides in safe work practices and accident reduction, having trained more than 14,000 apprentices. It has been a very successful training program with few subsequent injuries and no fatalities. But, if there is a way to make the existing program and standards safer, he supports that.

Mr. Bob Miller, Southwest Regional Training Fund (carpenters union), stated that coming from the field there is nothing more frustrating than to be told by the safety manager you need to be using fall protection and if you do not, you will be written up and have to stay home. Title 8 speaks to workers in residential construction in a clear concise language which tells them what they are to do for each phase of the operation in order to prevent a fall. California's residential framing standard is very specific to framing and the tasks associated with framing and very decidedly answers the questions that comes up in the carpenter's mind as far as what fall protection measures need to be followed. Carpenters are trained in California to know what to do based on the established Cal OSHA residential framing Guidebook directions. If the Federal 6 ft. trigger height and related rules are adopted, all the safety benefits provided when one follows the Guidebook will be lost. Employers will not have a set of contingent actions spelled out clearly in Title 8 on how best to avert a fall at every step of the way during framing operations. This would be a big step backward for California.

Mr. Dale Shoemaker representing the Carpenters International Training Fund stated he has extensive residential framing experience and you must look at each and every process involved in framing. Structures do not have sound anchorages from which to tie off and we should not get hung up on trigger heights. The Chairman stated that testimony received thus far seems to indicate that fall protection means something different for each step of the framing process and must be adjusted accordingly to be effective.

A labor representative from the roofers and water-proofers union stated that the committee should be aware that simply changing the rules to what is thought to be a more stringent requirement is not going to change the mind of the employer who is not following the current rules.

Mr. Richard Harris of the Residential Framing Contractors Association (RFCA) stated that he and others from the residential framing industry sat down with DOSH back in the early 2000's to help develop California's residential framing standards which later became law. Following codification of the new rules, many California residential framing contractors purchased hundreds of thousands of dollars of scaffolding (bracket scaffolding is very expensive) to protect

workers from falls above 15 feet. California broke ranks from what everyone else was doing by not allowing the use of controlled access zones (CAZ) and unwritten fall protection plans without first demonstrating the infeasibility of conventional fall protection. California residential contractors observing any other employer not protecting their workers above 15 feet would be reported to DOSH. This is why you will see contractors in California using scaffolds extensively. The "Level" program which was developed by the California Professional Association of Specialty Contractors (CALPASC) with the cooperation of residential framing contractors and the Department of Industrial Relations. The LEVEL program is designed to provide contractor observations of alleged violations to DOSH for appropriate enforcement action. Mr. Harris was not in full agreement with the comment by the roofer's water proofers union and clarified that in California, employers are not going to get away without complying with California residential fall protection laws as they will be ultimately turned in and run the risk of DOSH citation. California residential framing contractors made the commitment long ago not to use fall protection plans or CAZs as they had done many years ago when written fall protection plans for construction up to 3-4 stories high were used extensively. Today, residential contractors employ positive fall protection means and methods when working above 15 feet. Title 8 standards provide four distinct procedures of how to safely perform very specific residential framing processes.

Mr. Bill Callahan of the Associated Roofing Contractors of the Bay Area Counties (ARCBAC) stated that he too participated in the development of the California residential construction fall protection standard and the Guidebook. Regulations are only as effective as they are enforced and in California residential construction standards are stringently enforced. The California standard recognizes that not all roofs are the same and provides the employer with options to deal with each different and unique circumstance that places the worker at risk of a fall. The more options the better the compliance. Mr. Callahan stated that he was not aware of a single fatality in the residential roofing industry for the past 25 years in the Bay Area. However, there were a number of them outside of the roofing industry.

Mr. Callahan stated that Federal OSHA expressed concern and quoted statistics that 25% of the fatal falls were between 6 feet and 15 feet. This must mean that 75% of the falls are above 15 feet. Mr. Callahan asked Federal OSHA how many of those fatal falls involved the installation of versus the use or total absence of fall protection. He added that in his experience wherever there was a fatal fall it was because no fall protection was used. ARCBAC works programmatically with DOSH to ensure there is enforcement of California standards in effect at all times to ensure workers are protected above 15 feet from the threat of a fall. In the Bay Area ARCBAC employees have joined forces with DOSH inspectors to report all cases of workers at elevation above 15 feet without fall protection. In many cases the response by DOSH (enforcement action) has taken place the same day.

Mr. Barab appreciates that everyone in the room is very dedicated to the common goal of ensuring no worker dies from a fall from elevation. Taking into account the training and enforcement that has been discussed thus far, one could say that California has out-performed Federal OSHA and exceeded both State and Federal requirements. Mr. Barab stated that the

members of the committee are not representative of the world and so there must be stringent requirements to ensure that everyone including the less than stellar employers conform and comply. To cover the issue (residential fall protection) adequately you must have both stringent standards and stringent enforcement.

Mr. Bland stated that State and Federal representatives in the meeting seem to be using statistics against each other. What about the employers who are dutifully complying with Construction Safety Orders (CSO) Section 1716.2 that fall in between those two categories. When employers comply with CSO 1716.2 for the specific residential framing processes, they do not see the falls that were seen 10 years ago. What was the level of the compliance (did the employer provide fall protection?) for the employers who had employees that fell. There are falls that take place from ladders and other equipment; the California standard is applied for each of the residential framing processes and when followed results in a significant reduction of the fall risk. Fall protection regulatory effectiveness is a function of the work, where are the fall risks, how is the standard applied and how is it enforced and how effective is it in mitigating the fall hazard. This is why California residential framing contractors are so passionate about this issue. Process specific residential framing fall protection rules are the most effective way to address the residential production type construction fall hazard.

The Chairman then recessed the committee at 11:00 a.m. to prepare for the next presentation by Mr. Eric Berg representing DOSH.

Upon resumption of the discussion, the Chair posed a question to Federal OSHA relating to the BLS tabular data, specifically the fatal work injury rates for construction during 2007-2011. The Chair noted that in looking at the California rates versus the United States, the fatality experience in California is shown to be significantly less that the rest of the country. Taking into account the 6 foot Federal vs. 15 foot California trigger height, how does Federal OSHA explain higher fatality rates among states that enforce the Federal fall protection trigger height in residential construction?

Mr. Barab stated that the years 2007-2011 do not cover the period they are concerned about. Given when the Federal STD 3-01 was rescinded and the one year extension period Federal OSHA gave employers to come into compliance with the 6 foot trigger height, it is not a fair comparison and one cannot make the assertion that California was more effective with a higher trigger height.

Mr. Berg began his presentation by presenting the California fall protection standards for the residential construction industry beginning with those contained in Article 24 of the CSO. He indicated that California has many regulations that address fall protection including residential construction and enforces various trigger heights. He addressed the various roofing standards, which are quite complex and their related fall protection requirements. He discussed trigger heights in terms of: guardrails (7.5 feet), bracket scaffolds, floor opening, skylights (zero trigger heights), wall openings (4 feet), fall restraint and fall arrest regulations, purlins, plates, and beams, (15 feet). Fall protection is not required for what is considered short duration (non-

repetitive) work but the employer must comply with a number of conditions as specified in CSO Section 1669(c) to be exempt from fall protection. For the exemption to be accepted, the employer must demonstrate to DOSH that the hazards of installing fall protection exceed the level of the hazards that are created by the work being done. If the exception is granted, the work must also be overseen by immediate competent supervision. Mr. Berg provided some detail about how the California Occupational Safety and Health Appeals Board (OSHAB) ruled on what constitutes short duration exposure. One decision said that one minute was short term duration and another said 3 minutes. The OSHAB Board also ruled on what was not short duration exposure and defined that as being "a few instances lasting 2-5 minutes each." Employers have to provide factual evidence that fall protection is more hazardous to install than the fall risk associated with the work being performed.

The remainder of DOSH's presentation described the requirements of Article 24, Section 1670, which pertains to personal fall arrest systems, personal fall positioning and restraint systems and the 7.5 foot trigger height that is part of this requirement when workers are at certain elevated locations as specified in the standard. Mr. Berg described standards addressing the use of approved safety nets at 25 or more feet above the level below provided the employer can demonstrate that fall arrest and fall restraint systems are not practical. Mr. Berg also described Title 8 requirements for use of the written, site specific fall protection plan, controlled access zones and the safety monitor. He then went into detail about the provisions of CSO Section 1716.2 which pertain to wood and light gage steel frame and residential construction. The Scope and Application of this section defines what is meant by residential/light commercial construction. Various subsections of Section 1716.2 address safety requirements for protecting employees from falls but are keyed to the type of operation that is taking place such as, but not limited to, work performed on the top plate, joists and roof structure framing where the fall protection trigger height is set at 15 feet. There is an exception to this provision for fall protection that allows employees to walk on securely braced joists, rafter or wood trusses on center spacing not exceeding 24 inches and more than 6 feet from an unprotected side or edge.

Mr. Berg added that the 15 foot trigger height also applies when guardrail use is involved and railing protection is required by CSO Section 1716.2(f). CSO 1716.2 addresses work on starter board, roof sheathing and fascia board for which there is a zero trigger height if the roof is greater than 12:12 slope (45 degrees). Fall protection is required regardless of height if the roof is sloped between 7:12 up to 12:12, however slide guards may be used instead of fall protection.

Mr. Barab stated that slide guards are not considered fall protection by federal OSHA. Mr. Berg clarified that fall protection is not required when working inside the gable end truss if braced to withstand 200 pounds lateral force whereas fall protection is required regardless of height (zero trigger height) when work is performed outside the gable end truss, here during these operations the short duration exception comes back into play.

Mr. Berg discussed roofing operations as regulated by CSO Sections 1730 and 1731. These standards apply to the removal and application of roof coverings. Mr. Berg explained the roof height measurement concept (ground to eave), described the various types of roof coverings, and

how the varying trigger heights are applied as a function of the type of covering and roof slope. A 20 foot trigger height applies to roofs of 0:12 to 4:12 slope and that standard (Section 1731) provides the employer with a menu of options to address the fall risk. This approach and the 20 foot trigger height also apply to monolithic roof coverings on slopes greater than 4:12, again with options to control the fall risk.

Mr. Berg addressed Title 8 roofing standards and emphasized that the fall protection trigger heights were a function of the type of roof covering and the roof slope which DOSH believes are the two most influential factors affecting the fall risk. In most cases the fall protection trigger heights are 20 feet and when the work is performed at heights greater than 20 feet the employer must utilize one or more of the prescribed methods of reducing the fall risk, such as parapets, roof jacks, eave barriers, personal fall protection and scaffold platforms. Mr. Berg pointed out that Title 8 requires roof jacks with safety lines for roofs steeper than 7:12 and he stated that Section 1731 addresses residential production type roofing operations for any home with a slope greater than 3:12. This standard does not apply to custom homes, re- roofing or roof replacement operations. A 15 foot trigger height is imposed for roof slopes 3:12 to 7:12 and fall protection options are provided. There is a zero trigger height for roof slopes greater than 7:12.

Mr. Berg presented a statistical review of DOSH enforcement activity, and California fall accident statistics for years 2010-2012, pie charts describing the various sources of falls, and percentage of falls that resulted in fatalities from various construction operations. The census of fatal occupational injury data indicates there was a statewide decrease of 14% in construction industry deaths from 2013, while preliminary data for the United States shows an increase of 2% from 2013. Lastly, Mr. Berg described a table indicating impact velocity and energy of a 200 pound person falling. When comparing a 6 foot fall to a 7.5 foot fall, the difference was negligible in terms of velocity and impact energy. The difference in impact energy became significant only when comparing falls from 6 feet to falls from 15 and 20 feet.

Mr. Bland asked if DOSH residential construction statistics were inclusive of all trades involved, such a plumbers, electricians and pipe fitters or just persons involved in trussing, joist installation, gable work, roof sheathing and framing, starter and fascia board installation. Mr. Berg indicated that job code (Standard Industrial Classification (SIC)) searches were done which yielded the statistics he reported. Mr. Bland also asked if the data was arranged by falls from specific distances to which Mr. Berg indicated that DOSH does not have such data. Mr. Seaman inquired whether the OSHAB had provided any interpretation of what is meant by the term *feasible* in relation to the use of fall protection or fall protection plans. Mr. Berg responded that he was not aware of anything from the Appeals Board that clarifies this term in relation to fall protection.

Mr. Berg provided a second presentation describing fall injuries in residential construction for the years 2012-2014, based on data from the Worker Compensation Information System (WCIS) and Census of Fatal Occupational Injuries (CFOI). This data showed a decrease in residential construction fatalities over the quoted period. Other tables suggested that younger, less experienced workers experienced a greater injury risk and when falls occurred they were most

likely triggered by a slip or a trip. Mr. Berg opined that based on this data training and experience are very significant risk control factors in averting falls and related injuries in residential construction. Other graphs and California statistics presented by Mr. Berg indicated what percentage of falls from elevation resulted in a serious injury or fatality (most were contusions), medical costs of the main injury caused by fall height (contusions were the largest cost), and the number of falls for years 2011-2014 resulting in fatalities (3-4), the average cost for falls from height for each year for all industries (between 50 and 70 million dollars, it has dropped since 2007 to 50 million dollars).

The Chair announced the third and final presentation of the day by Mr. Bruce Wick, CALPASC, on behalf of Mr. Kevin Bland, California Residential Framing Contractors Association, Mr. Richard Harris, Residential Contractors Association and Mr. William Callahan, ARCBAC.

Mr. Wick provided a brief historical perspective for residential framing. Mr. Wick stated that CSO Section 1669 was the applicable standard in residential construction. When industry, DOSH and Labor got together 12 years ago to craft a new residential framing standard, they recognized that the culture needed to be changed. This was an industry that was used to doing things in a certain way. Both DOSH and employers did not like the use of fall protection plans. The meetings between the parties in the residential framing industry took place over a two year period. Mr. Wick reminded the committee that CSO Section 1716.2 addresses residential and light commercial construction operations. Mr. Bland added that the committee from 12 years ago worked the standard up from the slab, painstakingly addressing each and every nuance and aspect of residential, production and light commercial construction.

Mr. Bland stated the effort was well spent to ensure that workers are kept safe on the job. The emphasis was on the best and safest means of ensuring workers go home free from injury. Mr. Wick recalled earlier statements by Mr. Seaman that while we have done a great job at protecting workers we may want to consider whether we can go further. He also recalled Mr. McKenzie's statement that the fall statistics of 12%-15% in the 6 foot-15 foot range are hard to ignore. Mr. Wick stated that stakeholders and DOSH did not ignore that. California did not ignore dangers of working on a first story and trying to hang guardrails around the perimeter and install bracket scaffolds and disassemble it afterwards; all very dangerous operations. Ladders are very dangerous and not all work should be done from ladders. The position of the body when using a pneumatic nail gun while working from a ladder is problematic. These are all exposures for workers working on first story construction. So the emphasis shifted quickly to what is the safest way to do first story work. The emphasis also was placed on having safe multiple options for fall protection. More injuries occur while working from ladders and setting up fall protection. California is much safer than the rest of the nation. Mr. Wick described the 2012-2013 statistical data on fatality rates in construction and noted that California's rate was almost half of the national rate for 2012 and substantially lower than the national rate in 2013; both of these years represent times of a resurging residential construction industry and still California is consistently lower.

With respect to Mr. Barab's earlier comments, Mr. Wick respectfully disagrees that "every state provides better protection to workers than California." California is far more stringent than other states when compared to any other state on the amount of conventional true fall protection being used from 0 feet up. He also stated that DOSH's aggressive and proactive enforcement of residential fall protection standards outperforms most states. Penalties for non-compliance are three times higher than those of the Federal OSHA. Mr. Wick stated that word is out on the street that California is tough and serious when it comes to protecting workers from falls in residential construction. Various subgroups within the Division, such as the Labor Enforcement Task Force (LETF), police jobsites regularly to ensure the rules are being followed.

Mr. Bland stated that when you look at CSO 1716.2, California really has a zero trigger height such as, rolling truss where California requires some form of fall protection, not necessarily conventional fall protection, such as walking on trusses 24 inches on center. When installing joists, zero trigger height applies if you consider that regardless of height there is a process to provide fall protection that organizes the work to use structural components of the house to support the worker. Mr. Wick stated that in a prior Federal OSHA correspondence, it was noted that California still allows the use of a fall protection plan (FPP). Mr. Wick stated that is technically true. [However, to utilize the FPP option, employers must document the reasons why the use of conventional fall protection is infeasible; documentation must be developed to explain what is unfeasible and this is essentially what impractical really means as used in the Title 8 FPP standard.] Federal OSHA's understanding that California has a FPP standard that is solely based on what is impractical is not true. Section 1716.2 nearly eliminated the need for a FPP by nullifying the infeasibility issue since there are various procedural means and methods (as addressed in the Guidebook and Title 8) to address falls. Mr. Gary McIver, a DOSH field enforcement safety engineer, corroborated Mr. Wick's assertion that FPP use in California is not a go to method for addressing fall protection. Few employers have been able to justify the use of a FPP when so many fall protection methodologies are offered by CSO residential construction standards.

Mr. Wick indicated that under current Title 8 standards, a fall protection plan could not be used in roofing; conventional fall protection is required. We are talking about first story residential construction issues, and the use of a personal fall arrest system is not possible as you will hit the ground before the arrest device engages. Installation of guardrails creates hazards for the installing employee. Work done from ladders is not possible. Mr. Bland asked why choose a less safe option simply because it is legal? Work from ladders has had a documented history of problems for employees working from them. If the trigger heights in California are changed, employees will work from ladders and increase the fall risk. Since new employees are at greater risk, the focus for training is on them and the Title 8 standards specify this. Gable and end work of short duration may be debatable issues, however Mr. Bland described the method of work involved in gable end work in terms of truss installation dual truss installation, bracket scaffolds, and how you brace, secure and arrange the trusses to provide fall protection. This process was thought through very carefully when the Cal OSHA Guidebook was developed. Mr. Wick stated that while slide guards are not fall protection they are an assistive device to improve the employees' footing on the elevated surface and therefore a fall deterrent. [Note: It was at this

point in the discussion that Mr. Barab and Mr. McKenzie left the meeting to catch their return flights to the east coast. Three Federal OSHA representatives remained at the meeting.]

Mr. Wick continued by stating that the use of parapets are not permitted by CSO Section 1731, nor are warning lines without safety monitors. Mr. Callahan stated that work at elevation in residential construction was approached from a risk management point of view when California developed its fall protection standard in residential construction. The use of roof jacks and other methods in roofing were considered and that above 7:12 (steep roofing - 0 trigger height) slope certain methods, such as roof jacks, are prohibited. Personal fall protection is the only thing that is allowed by Title 8. Mr. Callahan noted that the use of roof jacks was prohibited by Federal OSHA after they rescinded STD 3.1 in 2010 but California continued to allow the use of roof jacks in moderately sloped situations. In non-state plan states there were 27 deaths from falls in 2011 and in 2015 there were 53; fatalities doubled when the roof jack option disappeared.

Mr. Wick pointed out that in California residential contractors do niche work; they do not do 14 types of construction. This was taken into account when the California standard was developed. Presently, each contractor knows what part of the Title 8 standard applies according to the type of work that a contractor actually does thereby eliminating a great deal of confusion in reading and complying with the CSO standard. Better understanding of what applies in terms of fall protection methods and a better method invariably leads to better compliance and a safer workplace.

Mr. Wick stated that contractors are provided with clear instruction as to how to work safely in proximity to floor, roof and wall openings, unprotected sides and edges; we believe our fall protection regulations are very clear. Mr. Wick asked Mr. Gary McIver if employers in residential construction were clear as to what part or parts of Title 8 standards apply to them. The Chair noted that from the response by Mr. McIver California residential contractors understand what fall protection standards apply to each phase of their work.

Mr. Dave Holt, Lennar Homes, stated that he was a part of the working group of stakeholders that developed the California residential fall protection standard and the Guidebook. The thrust of that committee's efforts was to provide the employer with options that could be used to tailor a fall protection strategy for the construction process. If the options go away, the recognition and consideration of how the workforce really does its job goes away too.

Mr. Raymer asked Mr. Bland to revisit the fatality chart he presented earlier. Mr. Raymer noted that the numbers in the middle column which represent the California fatality rate in construction as compared to the national fatality rate are 35%-40% lower than the national experience. This is of concern to him since this statistic is not being considered by Federal OSHA as evidence of a California program that is more effective than the federal program. These statistics show that California is doing a great job protecting workers in residential construction from injury and fatalities. California should be receiving credit for doing a better job than Federal OSHA in protecting workers. Mr. Bland added that if we looked at statistics in just residential construction as opposed to construction overall, California would look even better.

Mr. Callahan does not understand why when good accident statistics are provided demonstrating the effectiveness of Title 8 residential fall protection standards they are dismissed by Federal OSHA as inconclusive or not credible evidence of an effective residential fall protection standard. Federal OSHA uses nothing but statistical metrics to evaluate the overall effectiveness of the Cal OSHA enforcement program.

Ms. Pat Gaydos, Federal OSHA, stated that by agreement between Federal OSHA and the state plan states there are certain mandated and mutually agreed to metrics to be applied administratively by Federal OSHA to evaluate the effectiveness of any given OSHA program.

Mr. Mitch Seaman asked the Division whether there is any data that shows that when an accident investigation is done whether there is any systematic way of determining, or tracking whether the violation of a fall protection standard resulted in an accident or fatality, how often the violation led to a fatality. Mr. Seaman provided an example of an employer who installed a guardrail but it failed versus not having installed anything at all. Do we have similar numbers from other states; it seems like we are having this conversation in the dark. This could be a question of enforcement. We could have a situation where the California standard is less effective looking on paper due to the variation in trigger height, but in effect is more effective because of the superb enforcement by DOSH, which tends to create a significant peer pressure factor and motivation among contractors to report noncompliant employers to enforcement. This might not be happening in other states.

Mr. Bland asked DOSH how many inspections for falls from elevation DOSH conducted and issued no violation versus how many they conducted and issued a violation of a construction fall protection standard. In other words is there data that indicates that among the reported accidents involving an injury if there was a citation issued alleging violation of a fall protection standard and what was the standard that was violated and how did the employee fall?

Mr. Wick added that it would be useful to know how many workers are injured working from ladders, installing fall protection versus using another method that is safer as stipulated by current standards as described in the residential fall protection guidebook developed by DOSH and stakeholders.

This concluded the presentation by Mr. Wick, Mr. Bland and associates and related follow-up discussion.

Mr. Larry McCune stated he would like to report on the process of developing the California residential fall protection standard and the Guidebook. The advisory committee was convened to refresh the California residential fall protection standard and protect employees from falls. The standard was developed to protect residential construction workers. The basic construction process for one and two story residential structures was reviewed in terms of feasibility of installing fall protection on a single story structure and it was found to add risk to the operation especially on the lower structures. Increased use of ladders, scaffolds, and bracket scaffolds all

added risk and equated to falls at heights of greater than 15 feet. The Guidebook committee eliminated many of the fall protection methods employed at lower elevations that the committee felt would be more hazardous. There are three basic construction processes to be concerned about: 1) installation of trusses while working on the top plate, 2) installing floor joists, and 3) roof sheathing. All of those are addressed in current Title 8 residential fall protection standards. Mr. McCune stated he reviewed an illustrated on-line Federal OSHA "How To" guide for residential construction where they advocated use of a bracket attached to the top of unbraced trusses as an anchorage. If you loaded something like that laterally you would bring down all the trusses, which would be catastrophic. It is the same thing when using some sort of fall protection with rigging attached to joists. The load imposed from the fall protection would cause the joists to collapse. The committee found that use of scaffolds between joists and trusses resulted in more accidents and injuries climbing up and down from the scaffold than accidents from working on the top plate. Ladders are one of the most dangerous things in construction and their use in one story residential construction, which would occur if trigger heights were dropped in California as advocated by Federal OSHA, would result in an increase in accidents and falls from elevation in residential construction.

Mr. Jeremy Smith asked his brothers in the carpentry and roofers union training trust if the unions would stop training if Federal OSHA got their way in California such that the State reduces its trigger height to 6 feet. Would they stop using best practices? Mr. Wick stated that it would create a huge dilemma for the employer because they would ask themselves, "Do I want to do things less safe or do it legal?" Mr. Wick stated this is a decision he does not want any employer to have to make. Mr. Raymer stated if the Division makes changes, CBIA will get the word out and re-instruct employers. The problem is that if we countermand what has been proven to be an effective safety practice in California residential construction, that is not making things safer, and he is uncomfortable with that.

Mr. Tom Shanahan did some quick research and proceeded to explain his findings to the committee. He noted that according to Mr. Barab there are state plan states that follow the federal rule and 7 states being unique in terms of fall protection (their own trigger height) and Federal OSHA states which follow the Federal OSHA 6 foot trigger height in construction. Using 2014 national construction fall data for all the Federal States the fall rate was 5.7%, for all the state plan states following the Federal rule it was 5.8% and for the 7 unique states which includes California, it was 3.8%.

Mr. Richard Harris stated that this whole issued boils down to a question he has been asking Federal OSHA for the last 30 years, "How do you provide fall protection for those who joist a single story house?". The residential construction builders asked Federal OSHA how that process is to be done safely. To date, Federal OSHA has not adequately addressed that issue. He asked the committee to think about how you safely joist a single story house; this question has been unanswered for many years. He asked the committee to consider the plight of the residential home builder who constructs a 3 story structure. Mr. Harris asked how fall protection is to be provided for workers working on the bathroom, three stories up under the open sky. There is nothing up above these workers but the sky and therefore no safe place to tie off.

At this point the Chair adjourned the meeting for lunch. Upon return the Chair stated that given the pace of the meeting, he was confident that the second projected day for the meeting would not be needed. The Chair stated that a podium was provided at the back of the room for the audience to step up and express comments. In addition, the Chair noted that while the second day agenda indicated there would be discussion of cost impact, there is no proposal at this point in time and therefore discussion about cost impact could only be debated in a very general way. The Chair stated he was going to leave that discussion to the discretion of the committee. The Chair stated that the committee might want to have a discussion about what would be the ramifications to California residential construction contractors and workers if California adopted a 6 foot trigger height.

The Chair indicated that the last item up for discussion would be post advisory committee meeting follow-up, at least as far as can be foreseen. The Chair then called for comments from members of the audience at the back of the room.

The first speaker was Ed Calderon, Shea Homes Safety Manager, representing a large scale production type residential home builder who in turn introduced persons accompanying him, his insurance carrier, a framer (worker), and a framing contractor. Mr. Calderon turned to the Federal OSHA representatives and stated that if California dropped its fall protection trigger height to 6 feet, he is confident that contractors could install a bracket system to protect workers performing their work from the outside of the structure. Echoing Mr. Harris's earlier comment he wondered about the worker who is doing top plate work from trusses on the inside. This would invariably lead to increased work from ladders or the installation of netting. How would the contractor safely move the ladders? He speculated that rolling scaffolds might be used, but dismissed scaffold use as being too complicated and surmised that workers will perform their work from ladders with some very difficult body extensions. The only feasible way to protect workers who need to do a roof inspection at 6 feet and above is to use a top plate leading edge scaffold. Mr. Calderon stated that while this type of fall protection technology works to protect workers on the outside of the structure at 6 feet and above, it does not work for workers who are working on the *inside* of the structure.

Mr. Bob Raymer stated this is the same issue that appeared many years ago when California was developing its current fall protection guidelines and standards. Mr. Calderon indicated that Shea Homes builds residential production type homes spread out over very large subdivisions.

The Chair asked Mr. Jim Wulff representing Federal OSHA to respond to Mr. Harris and Mr. Calderon's concerns about how to protect workers on the inside of the structure using fall protection at 6 feet and above. Mr. Wulff stated that there are a lot of situations a contractor is going to face and will have to deal with specific areas of the construction and how to handle them in terms of providing fall protection. The majority of states have already faced the same fall protection issues and have found ways to address them that comply with the Federal OSHA 6 foot trigger height. The Federal 6 foot trigger height standard has been in existence for a while and most of the country uses the Federal rule and it works fine. There may be prickly scenarios,

but one must research the individual situation and find the best way to handle it while keeping the Federal perspective in mind. Mr. Wulff stated that while he represents Federal OSHA at this meeting, he cannot provide answers for every specific situation. Mr. Calderon stated that what he has seen on the Federal website and which he takes to be their advice on how to handle the 6 foot trigger height requirement to protect workers who work inside the structure, advises employers to use rolling scaffolds. Mr. Calderon stated that in the real world workers are not going to use a rolling scaffold because it is clearly impractical and fraught with repetitive motion issues. Instead they are going to quickly revert to the dangerous use of ladders.

Mr. Wulff stated that Federal OSHA recognizes that ladder use is not the answer to everything and that could put someone working from a ladder in danger. On the other hand, Federal OSHA knows that there are companies out there that have workers using fall protection 100% of the time regardless of the working elevation. Those companies exist, they are viable and they make money protecting workers 100% of the time.

Mr. Bland stated that California has labored to find innovative and practical fall protection solutions for many years. He respects the Federal position and realizes there is a wide difference of opinion of whether California protects its residential construction workers as effectively under Title 8 standards as the Feds do under theirs. However, Mr. Bland challenges the notion that companies are effectively protecting their workers from falls 100% of the time and also has concerns over the technology being used to accomplish that. He stated that while it looks good from the street to see every worker tied off, if you peel back the layers of the onion you will find that it is not really protecting workers as some might be inclined to believe. For one thing, the anchorage points are either inadequate or simply not there. This means that the 5,000 pound anchorage stipulated by both Title 8 CSO and by Federal regulations is not being met and therefore the system is not in compliance and the fall risk has not been mitigated.

The Chair invited more comments from the audience. Ms. Teddi Penewell stated she represents the American Society of Safety Engineers (ASSE), Region 1. The Chair made note that Ms. Penewell submitted a letter to the Board dated November 2, 2015, urging the Board to adopt the Federal 6 foot fall protection trigger height for residential construction. She presented the letter to the committee verbally. She stated that the ASSE stands firm on the 6 foot trigger height all across the United States. With regard to fatalities, the list of high hazard industries (she did not indicate if this is a Federal or a State of California list) includes framers, steel workers and practically anyone who works at elevation. She stated that she listened intently to the discussion and that she was not involved in the discussion that took place long ago which produced California's Guidebook and the current standard. She appreciates how much work and passion went into development of the State standard, but that maybe it is time to review the California standard in light of new technology and product development. She cited ladders as being one device that has undergone so many technical changes, and there are new types of scaffolds and scaffold ladders on the market. It is time to look at the standard to see where California can recognize this new technology in its residential fall protection standards.

Mr. Bruce Wick stated that his contractors have been told by the prime contractor that when working at elevation building residential homes the contractor is to follow very specific instructions. The contractor bids the job based on assurances given to the prime contractor that compliance with whatever it is the prime contractor explicitly states will be followed as far as safety rules go, but that later on, the contractors will speak up and say that they do not like what is being imposed on them. The contractors state that their employees do not like the rules and that they do not feel safe on the job complying with them (i.e. a 6 foot trigger height and using a fall arrest system), in fact, the employees know they are not safe. They know all about the latest technology in an effort to comply with the prime contractor's directive to do fall protection at 6 feet, but they also know from experience there is no technology that will simply make the job safer even working at the lower trigger height. Mr. Wick stated that we need to deal with this issue; compliance at 6 feet versus considering and implementing the safest method, the safest way to do the job and the 6 foot trigger height are quite different. Mr. Wick stated that he does not want to be in a position to tell people to comply with an amended rule that mandates a 6 foot trigger height and which places workers in jeopardy.

Mr. Bland stated we are compassionate and serious about safety and we embrace change. We are not resistant to change; but we are resistant to the kind of change that will make the residential construction jobsite less safe.

Mr. Raymer stated that the CBIA has absolutely no problem in revisiting California's residential construction standards. The CBIA and the California Energy Commission does this every three years. He stated that his hope and desire is to get clear direction from Federal OSHA in the form of a written statement regarding what are their expectations of California with respect to the 6 foot trigger height. He wants to maintain as much of the very good residential construction fall protection standards we have right now in California and blend it with whatever it is (portions) of the Federal standard that will make California at least as effective as the Federal standards or put another way, accommodate the Federal concerns. We do not need to start from scratch because we have a standard with a very good track record in California. The CBIA would oppose any carte blanch effort to scrap the State standard for the Federal standard for this issue. It would be good to be able to understand (from Federal OSHA) what we need to do at that 6 foot to 15 foot level to move forward but in a way that does not create new or additional hazards simply for the sake of compliance with the Federal rule.

The Chair summarized the only other written comment received in advance of the meeting and that was from Ms. Deborah A.P. Hersman, President and CEO, National Safety Council (NSC), dated October 23, 2015, to the Board Chairman in which the NSC urged the Board to adopt residential construction fall protection standards that protect workers at elevations of 6 feet and above. The NSC cited the Occupational Safety and Health Act and a number of statistics relating to falls, slips, and fatalities in the construction sector drawn from various national databases and not specific to California. These comments will be posted on line.

Mr. Richard Harris highlighted a very important distinction regarding California trigger heights in residential construction and explained to the committee that the two commenters (ASSE and

the NSC) assume that the California 15 foot trigger height is for all workers building a house across the board and this is untrue. The 15 foot trigger height applies to only the framers. He emphasized that there are four phases of residential construction where the 15 foot trigger height applies: 1. floor joist (rolling), 2. perform roof sheathing, 3.frame the second floor and 4. truss a single story. It is only for these four specific tasks that the 15 foot trigger height applies. No other trades are permitted to work at 15 feet without fall protection being provided meaning, no electrician, no plumber, or any other trade can work at 15 feet without fall protection. The residential construction guidebook explains in explicit detail what the rule is, how it applies and what you (the framer, roofer) are to do under Title 8 standards to comply for each of the four residential construction phases. Work processes such as rolling joists cannot be done safely from a ladder. Commercial construction uses the same method and it is spelled out in an administrative plan they use and refer to as a controlled decking zone similar to what the iron workers use; they are not tied off and they do not use rolling scaffolds. He noted that iron workers sheath a floor with decking at elevations well above 15 feet, measured in stories, and they are not required to be tied off even though they may have structural steel members above them that can provide suitable anchorage. Instead they use a written administrative plan which establishes a controlled decking zone (CDZ).

Mr. Harris stated that perhaps the California framing standard was not written in the clearest possible way. He stated that perhaps we have given everyone the impression that we have an overall 15 foot trigger height, which is not the case. We have a zero foot trigger height that you can do only four things (mentioned above) between 0 feet and 15 feet. Perhaps what we need to do is to borrow a page from steel erection and the iron workers and require a controlled joisting zone for the first floor, a controlled sheathing zone, a controlled framing zone and a controlled trussing zone on the second story. The use of the truss support plate, a type of substantially supported 2 foot by 6 inch truss designed to be able to withstand the intended walking loads was a creative innovation of DOSH and stakeholders to find a practical way to provide needed protection for framers walking at elevation. Mr. Harris stated that ladder use would result in the worker having to ascend and descend at least 400 times during the construction of a 1,200 square foot first floor sometimes carrying a heavy pneumatic nail gun. This is the way Federal OSHA would have us do it rather than simply walking 8 or 9 feet on a 6 inch wide truss support plate designed to safely support the load as we do in California. He added that this issue should probably be straightened out on a national level. He closed by saying that if we can send a man to the moon in the 60's we can figure out a way to joist a single story house safely.

The Chair reminded the committee that the agenda also included a discussion of means, methods, practices and equipment that could be used in residential construction to make the work as safe as possible. The Chair solicited comments from the committee about fall protection methods that have proven successful that should be considered and which could be the basis for future discussions on residential fall protection. Mr. Harris stated that nothing on this issue had been done in this entire state until 2002 when work began on a residential construction guidebook and Title 8 amendments leading to Section 1716.2. California framing contractors and Labor reached agreement with DOSH that if permitted to frame, truss, joist and sheath as the current standards now permit, the industry would refrain from use of the fall protection plan. Today 70%-80% of

every residential construction worker is protected. Given the example of the single story 1,200 square foot home Mr. Harris mentioned earlier, an employer would be looking at least $1,550-$2,000 in added cost for providing fall protection equipment and he is not sure how it would be rigged. Mr. Harris opined that such expenditure would result in little or no improvement in worker safety.

The Chair stated that it was clear based on the testimony, that at some point in the future we may want to revisit California's residential construction standards. Again, the Chair asked for committee input on any new means, methods, practices, devices that have merit for consideration as possible fall protection alternatives. Mr. Chris Cetin, Labor representative who is involved in the bidding process for residential construction jobs stated that the bid is based on implementing California fall protection standards. If the client wishes the contractor to follow Federal fall protection regulations, the contractor recalculates a revised bid and sends that number to the client. Mr. Cetin is uncomfortable in providing and having a worker wear personal fall protection when working on a first story construction which the client stipulates. Mr. Cetin stated that at 6 feet, using personal fall protection devices such as a retractable lanyard does not work. The worker will either hit the ground before the lanyard and the deceleration device will engage or he/she will come to an abrupt stop and be suspended about 2 feet off the ground. That sudden shock is very damaging to the body, equal or worse than a fall. Mr. Cetin opined that we have a current residential construction fall protection standard that works. California is doing the right thing. California employers should be allowed to do what is right because it is California that will have to live with the decision. Mr. Cetin closed by saying just because Federal OSHA says it is the right thing to do does not make it right and the proof is in the California versus national statistics.

Mr. Bob Downey stated that the Chair's question about technology struck him in a manner that relates regulations together. He stated that using steel erection as a model or guide, steel erection standards require contractors to bridge long spans of steel joists because of their flexibility before we put them up on structural steel to keep them from twisting which could cause them to fall or cause an employee working at elevation to fall. He stated that it occurs to him that with residential wood trusses perhaps multiple trusses could be connected together with fall protection attached (although it is not presently done this way). This method could establish a suitable anchorage point. He did not know what the added cost of this technique would be. It is merely an idea that might be workable for single or even multiple story residential construction where trusses are used, and that perhaps this could be another option to consider.

Mr. Downey then clarified for everyone's edification that we are not abandoning the 6 foot trigger height, which in California equates to the 7-1/2 foot trigger height. We are merely offering what amounts to an exception for the four residential construction processes mentioned earlier by Mr. Harris where 15 feet is a more reasonable approach to protecting workers so that if they do fall they will not hit the ground before the arrest device engages. He works with many construction employers, such as the Construction Employers Association (CEA) which is 110 members strong, and contains contractor organizations where the employees are represented by collective bargaining organizations. He also works with many business owners who mandate fall

protection at 6 feet for all applications not realizing that workers who tie off at a point below their waist (nothing above them to tie off to) is ridiculous (hitting the ground before descent apparatus kicks in) and they are creating a secondary tripping hazard.

Mr. Downey said CEA members who worked on the present California standard going back to 2002 looked at providing fall protection from a "reality perspective" not an "oh my God I am 6 feet off the ground and will get hurt." He is an experienced safety engineer knowledgeable in construction safety and does not want people to get hurt. As safety professionals, our objective is accident prevention and standards are developed and promulgated that protect employees and not merely comply with a mandated number. If Federal OSHA allows iron workers connecting steel to work up to 30 feet above the lower level without active fall protection and allows deckers to work up to 15 feet without fall protection and allows deckers using a CDZ to work even higher at 30 feet and yet cannot accept this reasonable deviation, he does not think that is effective safety. Mr. Downey, addressing the Federal OSHA representatives, said that they should give credit where credit is due and recognize the consensus of the residential fall protection advisory committee, which he participated in, and allow California to continue to use its existing CSO standards to protect residential construction workers.

The Chair reviewed use of the California Injury Illness and Prevention Program (IIPP), for which there is no Federal counterpart and how it relates to the issue of residential fall protection. Mr. Berg indicated that all California employers are required to have an effective and continuing IIPP. Most importantly Mr. Berg stated it requires the employer to do a site hazard assessment and address all the recognized hazards on site as well as training and communication methods. While not specific to any particular hazard Mr. Berg clarified that it is an overall administrative method for ensuring the safety and health of workers across all industries. The Chair opined that the IIPP, Heat Illness and Ergonomics standards (none of which have Federal counterparts) all have a positive, enhancing (mitigative) effect upon the fall protection issue by ensuring other hazards which could contribute to a fall from elevation are addressed. The committee, including DOSH, indicated they were in concurrence with that statement.

The Chair repeated that a discussion of economic impact appears to be premature at this stage since there is no proposal against which to evaluate cost impact. The committee was in general agreement with this statement. Instead, the Chair asked the committee to comment on the effect upon everyday residential framing worker safety if California's residential framing fall protection trigger heights were lowered from the present 15 foot level to 6 feet.

Mr. Bob Raymer reflected on Mr. Harris's testimony and stated that going to a 6 foot trigger height would not result in an overall significant added cost to construction because employers would consider use of the fall protection plan. Mr. Raymer stated that an even better question is how would that be progress forward in protecting workers? It would be a step backwards. He is not opposed to revisiting the standard by the committee but not at the expense of being forced into the Federal model of fall protection which will only result in more injuries and accidents. He stated the home building industry will do whatever they are required to comply with, but he asked if we would be making California safer. He does not think so and certainly not for the

framers. The residential framing advisory committee discussed all this and more many years ago when the present standard was developed. The Chair invited more comments and asked the committee to be specific and provide rationale in addressing the question of what we gain from going to a 6 foot trigger height and what do we lose or give up?

Mr. Kevin Bland stated that if California goes to the 6 foot trigger height and assuming employers in California will follow what is prescribed on the Federal OSHA website (recalling Mr. McCune's earlier testimony) we will see a marked increase in the accident rate as employers turn to increased ladder use and administrative plans and, we will see an increase in workers compensation insurance costs, increase in injuries due to use in increased ladder use and other conventional means and injuries associated with the installation of these devices. Mr. Bland has already represented clients who were injured on the job installing fall protection devices; one involving a worker struck by a falling bracket scaffold at a residential construction site.

Mr. Mitch Seaman stated there are many good arguments by stakeholders against adopting the Federal standard which make sense to him, but what is also clear is that there is a universal willingness by everyone in the room to revisit the California standard and see if there is any room for improvement. The California standard seems to be working quite well. I am sure there are many great ideas out there by many subject matter experts in the room and others not present that could help us in making any needed improvements to our current standard. The present standard works well but it makes sense to keep this effort moving forward, not to say we should be like the Federal OSHA standard, but how do we make what many believe to be a flawless standard even better. We might write in our suggestions to the Board in the form of suggested language or simply sit down and go through the standards line by line, say in six months, to see what we can agree on in terms of what would really make the standard better, but not change for the sake of change or to make Federal OSHA happy.

The Chair asked the Federal representatives whether they would support future committee(s) revisiting the California standard to explore uniquely creative and innovative ways to make the standard even better than it is now, as suggested by Mr. Seaman.

Mr. Jim Wulff stated that the decision for follow-up action is ultimately in the hands of the committee as far as what needs to happen next. Getting a committee together as has been done today to discuss the residential fall protection standard is a positive approach. He added that what struck him from sitting in the meeting all day is that California obviously developed its current standard via consensus from the slab up to look at each phase of the construction process to find creative ways to deal with the associated risks. He also mentioned that a long time ago he participated in a Standards Board's advisory committee involving a construction issue and was impressed with the approach to solving problems and coming up will well-intentioned and well-meaning standards with stakeholder buy-in. Mr. Wulff stated that he was still impressed with this approach. There is no doubt that it has been a methodical process with lots of time and energy put into it. However, the question now is whether the status quo is good enough given all the changes that have taken place in the residential construction industry. California needs to put its collective heads together and come up with an amended standard that meets what we (Federal

OSHA) need and what California stakeholders need. Mr. Wulff stated that he believes California can do that.

The Chair stated that he felt the committee would generally agree with the concept of reviewing the fall protection standard for improvements, thereby essentially pointing the way to refresh Title 8 residential construction standards. Perhaps a series of traditional advisory committee meetings could take place with Federal OSHA participation and if necessity is demonstrated, consider amended language. A series of such committee meetings could consider a reorganized and updated standard, one that focuses the 15 foot trigger height for the four specific residential construction tasks mentioned earlier by Mr. Harris while being clearer that the 7-1/2 foot trigger applies to all other situations where employees work at elevation.

Ms. Penewell stated that we are all passionate about protecting workers but while there are "lies, damn lies and statistics" to quote Mark Twain, we keep debating our positions in terms of our own statistics but the fact remains that the Days Away Restricted Transfer (DART) rates (the DART rate expresses the amount of time a worker is off the job due to accident or illness) for trades that work at elevation without fall protection in California are too high. Residential framers have a California DART rate that is above what is considered to be the expected. To get on the high hazard list (assumption here is that she is referring to California's list) you must have 200% over the prior year and in 2013 the DART rate was 2.1 for framers and they are on the high hazard list along with steel erectors.

Mr. Wick, in responding to Mr. Seaman, stated that the industry continues to believe that California's residential construction standards are a very successful set of regulations; they are clear, practical and enforceable. He does not oppose looking at areas within the current standard that might need amending, data is needed to support changes in the residential framing standard and we should take a look at data that shows injuries and accidents for those workers who install fall protection. [Data on related working from ladders in residential construction would be helpful.] We need to eliminate accident statistics that do not apply to residential construction and break out or deduct falls through openings, skylights and such (situations not related to the four residential construction phases mentioned by Mr. Harris). The development of any CSO amendments should be steered by the data and he believes data to support the review of the standards needs to be developed.

Mr. Raymer recalled a prior 4 year CBIA study to examine the issue of fire fatalities attributable to the age and construction of the structure where an incident report was developed and filled out by local jurisdiction fire authorities for the Office of State Fire Marshal (OSFM) and logged into a data base. He asked if the committee could gain access to similar data, incident reports (assuming they exist) for residential construction injuries and fatalities. Mr. Berg responded that employers are required to report serious injuries to DOSH. He noted that they are not all reported, but the inspection triggered by those accidents is recorded in the DOSH data base in the form of an accident summary. The reports could be segregated according to SIC codes and provided for review. Mr. Berg stated that the data would even tell you whether a citation was issued. Mr. Raymer indicated he would contact the Division to discuss extraction of relevant

data for future committee review. There is quite a lot of data that is too generalized that may not break out accidents, injuries and fatalities actually attributable to residential construction practices, so it will not be easy.

The Chair brought the committee to the the last agenda item which is to summarize the advisory committee's consensus. The takeaways from this meeting are as follows:

- The committee is generally agreed that existing California residential construction standards have been at least as effective, or even more effective as evidenced by the relevant accident, injury data that is available, in protecting workers from serious injuries due to falls from elevation.
- The committee also agrees that a revisit of the California residential construction fall protection standards may have merit given the standards have been in effect since the early 2000's and a refresh/update and/or technical clarification should be part of the exploration process into areas where the standard(s) could be improved.
- Any exploration for improvement to the existing Title 8 residential construction standards should be guided by the best available statistics as a basis for necessity.
- California's residential construction standards need not mirror the Federal 6 foot trigger height to be at least as effective as the Federal standard.
- To accomplish the preceding and to thoughtfully and competently consider the forgoing issues, Board staff should convene as many future advisory committees as needed to fully address the issues in the manner outlined above but that the committee is to be provided with the necessary and telling statistical basis to support a need for changes to the standards.
- Federal OSHA should continue to participate with the committee and that Board staff continue to assure the representative nature of future committee attendees by being inclusive of any stakeholder with relevant and requisite subject matter expertise. This may entail a slight member expansion of the current committee roster to accomplish this.
- It might be helpful for the full Board to be provided with an opportunity to publically weigh in on this issue after being briefed on advisory committee deliberations.
- Federal OSHA should provide a written opinion that indicates how much, if any, deviation from the federal fall protection standard and the 6 foot trigger will be allowed. The response would have a substantive effect upon the direction of future advisory committee meeting deliberations.

Ms. Hart stated that once the minutes of the meeting are distributed to everyone, it is customary to put the minutes out for public view (on the internet posting on the OSHSB website) and provide stakeholders with an opportunity to agree or disagree with them and/or submit additional information in the form of an informal comment to Board staff. She stated that from what she has heard here today there seems to be agreement that we have a very effective residential construction fall protection standard in California, but that there are things we might be able to do to make it even better. She also indicated that she has heard Federal OSHA recognize the hard, passionate work that went into the California standard but that the State should explore ways Title 8 residential construction fall protection standards could be improved. Ms. Hart

stated that she did not hear the Federal representatives direct the State to adopt Federal language, rather what can be done to meet both California and Federal interests. When the meeting minutes are mailed out we expect feedback from not only the California stakeholders but Federal OSHA too; hopefully in the form of some type of written opinion, to ensure California is on the right track in terms of future advisory committee deliberations and direction. She also stated that based on the discussion, the full Board should weigh in on the issue.

Ms. Hart predicted that the Board and Federal OSHA will undoubtedly ask Board staff for an action timeline. She pledged that we will do our best to meet it. She closed by saying the meeting was extremely productive and personally enlightening. She also stated that just because California does better than the federal standards in addressing fall protection issues, it does not mean it is the best we can do, as stated by Mr. Seaman.

Mr. Raymer said this was all good, and the committee should proceed forward. Mr. Callahan stated that the OSHA act requires the State to provide a system of effective enforcement and field enforcement of standards that will provide a safe and healthful place of employment and he added that it was his belief that California is doing this for this issue. He stated he does not oppose looking at California standards with an eye towards improvement so long as being effective means effectively addressing the issue, not simply verbatim of the Federal standard.

Mr. Bruce Wick stated that there may be someone in DIR with the ability to mine data and go back and research the real cases, the fatalities, and the accidents; essentially all data that is relevant to the issue of residential fall protection, not some of the data but all of the available data ahead of time before we get into the future discussions.

Ms. Hart stated that before Board staff moves further into future discussions that those meetings be initiated only after all the data deemed necessary for the committee to make a competent decision on where existing standards may need amendment is acquired. Perhaps through Mr. Berg we can identify if there is someone at DIR that can mine data (dig through accident history) for us. Hopefully, they will be able to isolate and provide the data we need. She said most importantly, the committee needs to be clear and precise as to what data points would be helpful. To that end, she noted that Mr. Wick had recited some suggested data points.

Mr. Dale Shoemaker representing the Carpenters International Training Center stated that any future discussion of improvements/amendments to the existing standards on this issue should include a clarification over what constitutes effective training in a consistent consolidated fashion. Mr. Richard Harris agreed and stated that the DOSH Guidebook used in residential construction should serve as the basis for the training and a training requirement.

Mr. Seaman stated that as far as the concept of the State being at least as effective as, the State should be given latitude in determining what is at least as effective as but also noted that you can only read so much into statistics. The regulatory text and what it says is tremendously important as far as determining whether we have standards that are effective in protecting workers. Regulatory text is needed to ensure that employers not represented in the room today are up to

par with protecting their workers the same as everyone in this room. Statistics cannot tell us the whole story.

Mr. Wick basically agreed with Mr. Seaman and stated that data is helpful, but wants to see specific data that tells us something about how well we are protecting employees and could be used to form a solid basis for what we need to do in terms of amending our residential construction standards.

The Chair closed by stating that he too was impressed with the passion and energy displayed by the committee to try to resolve some very challenging fall protection issues in residential construction, and that through this committee there is a great pool of knowledge and experience at the disposal of Board staff to address these issues. The aforementioned data points should be a joint responsibility of DOSH/DIR and committee members as far as what those points should be and extracting them from the department database. We remain ready to take effective action through regulatory changes to avert tragedies on the job and are always looking for room for improvement. The Chair reminded the committee that Board starts off its meetings with a stated pledge that standards shall be promulgated that will be clear, concise, enforceable and effective in protecting workers to the extent that *the nature of the work reasonably permits*. Board staff will not lose sight of that guidance through the succeeding committee meetings and any rulemaking process that may come about in the future.

The Chair stated his appreciation for committee, DOSH and Federal OSHA participation in the meeting. Mr. Wulff stated that the previous Federal OSHA letters to the state on this matter and Mr. Barab's and Mr. Mckenzie's statements, with regard to how Federal OSHA sees the California standards, should be committee's guideposts for future discussions.

There being no further business, the Chair adjourned the meeting at approximately 3:45 p.m.