OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, CA 95833
(916) 274-5721
FAX (916) 274-5743
Website address www.dir.ca.gov/oshsb

ADVISORY COMMITTEE #3 MINUTES
Proposal to Consolidate Safety Orders for Cranes in Construction (CSO Article 15) into General Industry Safety Orders Group 13 (Cranes and Other Hoisting Equipment).
July 22-23, 2015
Sacramento, CA

**Wednesday, July 22, 2015 (First Day).**

**1. Opening remarks.**

The meeting was called to order by Chair, Conrad Tolson, Senior Engineer, Occupational Safety and Health Standards Board (OSHSB), at 9:30 am. The Chair was assisted by Leslie Matsuoka, Program Analyst, OSHSB. The meeting opened with self-introductions by those in attendance, including members and interested parties.

**2. Background of the proposed rulemaking.**

The Chairman reviewed the Standards Board policy regarding the use of advisory committee meetings; i.e. they are informal and advisory in nature. The Board will use consensus recommendations to develop a reasonable and effective proposal; however, it may be necessary later in the rulemaking process to amend, modify or reject these recommendations, due to the review process. Furthermore, California must be at least as effective as federal standards.

Chair briefly reviewed the background of the proposal. Prior to July 7, 2011, all Title 8 crane standards were horizontal and resided in the General Industry Safety Orders (GISO); however, a federal negotiated rulemaking (CDAC) in 2010, promulgated standards in 29 CFR 1926 specific for cranes and derricks in construction. The Board originally proposed to combine provisions of the CDAC into the GISO using an expedited (Horcher) rulemaking process; however, general industry stakeholders were concerned that the proposed inclusion of the new federal construction standards into the GISO could "over-reach" and apply to general industry. This was not permitted by the Horcher rulemaking process; thus the CDAC was placed in the Construction Safety Orders (CSO). Since that time, the Board has received input from stakeholders (both management and labor) that it would make sense to recombine all the crane safety orders back into the GISO to provide "one stop shopping." The logic being that a crane, particularly a mobile crane, can work on construction and general industry-type projects sometimes in the same day. Thus the goal is to reach a consensus proposal to combine CSO into GISO.

This is the 3rd advisory committee (AC3) working on the task of bringing the CSO crane safety orders into the GISO. Subjects proposed for review by AC3 included the following:

- Operational aids
- Operator qualification and certification.
- Signal person qualifications.
- Qualifications of maintenance & repair employees.
- Training.

- Inspections & Maintenance.
- Wire rope – Selection, installation and inspection.

Chair added that the goal is to have the proposal ready for in-house review around the end of the year, and he estimated that one more advisory committee would be needed, probably in early October.

**3. Written comments.**

A comment had been received recommending using the ASME B30.5 definition for "operational aid" rather than the federal or state definitions in section 4885.

The commenter, Brad Closson, had also recommended using B30 standards for the minimum ratio of boom hoist drum and sheave pitch diameters to nominal rope diameters to those specified by the B30 standards which had been incorporated by reference. This was because the existing section 4949(c) ratio is no longer entirely accurate, and may be further obsoleted by new synthetic ropes coming on the market. The B30 standards that CA has incorporated take into account these differences.

The definition for "operational aid" was up for discussion next. Chair said he would review the sheave/drum/rope ratio issue later since it was not on today's agenda.

**4. Section-by-section review.**

The committee next turned to a section-by-section review of the proposal.

***Operational Aids.***

The Chair stated that when section 5018 was reviewed at the March advisory committee, many members had problems with the "temporary alternative measures" allowed by the feds for operational aids, and the consensus at that time was to delete the section as being less protective than existing California standards. The Chair said that when he went back to incorporate the committee's consensus agreement into the work-in-progress Form 9, it became apparent that many other sections cross-referenced to this section and that it appeared "the baby had been thrown out with the bath water." That is, there were parts of the section that were necessary to the rest of the standards. Section 5018 is also a central listing of operational aids. Although other sections contain operational aids specific to specific types of cranes, it is desirable to have a central listing/index.

***Section 4885, Definition of Operational Aids.***

Pursuant to a written comment received prior to the committee meeting, Chair posted a side-by-side (SXS) worksheet showing the federal definition, the currently proposed state definition and the B30.5 definition for comparison for a determination of which one to use in section 4885, definitions. The B30.5 definition would read:

> "Operational aid: An accessory that provides information to facilitate operation of a crane or that takes control of particular functions without action of the operator when a limiting condition is sensed. Examples of such devices include, but are not limited to, the following: anti-two-block device, rated capacity indicator, rated capacity (load) limiter, boom angle or radius indicator, lattice boom hoist disconnect device, boom length indicator, crane level indicator, drum rotation indicator, load indicator, and wind speed indicator."

Bobis spoke in favor of using national standards as much as possible, and supported using the B30.5 definition in 4885. The committee appeared to be in agreement, so the B30.5 definition of "operational aid" will be used in lieu of the federal definition.

***Section 5018, Operational Aids.***

***Subsection 5018(a).*** Chair stated that by virtue of being in Article 98.1, section 5018 will apply to all crane types, therefore he proposed to add "as applicable" to the federal prefatory verbiage, to prevent misapplication of operational aids. He added that, after listening to the proceedings of the last advisory committee, it appeared the biggest problem people had was with the temporary fixes allowed by the federal verbiage. This time he proposed to limit the "temporary alternatives" to be more consistent with existing California standards. He also noted that, while the feds have Category I and II operational aids with 7 day and 30 day allowances for repair, the proposal will be to limit the time to repair (if the committee agrees to any allowance). He suggested that the committee first review the operational aids and then revisit the questions of temporary alternatives and allowable repair times.

***Subsection 5018(b).***

This section was proposed to read:

> "(b) Operations shall not begin unless the listed operational aids, as applicable, are in proper working order.
>
> "Exception: Where an operational aid is not in proper working order, equally protective alternative measures specified by the crane/ derrick manufacturer, if any, may be followed."

Chair opined that the proposed verbiage is more protective than the federal verbiage and is consistent with current practice. The committee had no comments on this subsection as proposed.

***Subsection 5018(c).***

As proposed, this section would read:

> "(c) If a listed operational aid stops working properly during operations, the operator shall safely stop operations until the device is repaired, alternative measures specified by the manufacturer are implemented, or the device is again working properly. If a replacement part is no longer available, the use of a substitute device that performs the same type of function is permitted subject to the provisions of section 4884.1."

The requirements of section 4884.1, modifications were reviewed.

One commenter verified that a "certified agent" is a registered engineer.

Bland expressed a concern that "alternative measures specified by the manufacturer" and "replacement parts" should not be interpreted to require that only manufacturer's replacement parts be used. (The Board recently had a similar issue come up for another type of construction equipment where the manufacturer was insisting that only their replacement parts be used.) Pena agreed with Bland's concern and proposed modifying the proposal to include "suitable replacement."

The Division opined that "suitable device" could be interpreted to be a temporary fix.

Closson added that there are two issues here. At one time operational aids were mostly secondary market add-ons and could easily be swapped from one crane to another; however, modern cranes

require very specific equipment and parts generally are not interchangeable between one crane and another. Furthermore, manufacturers may not approve them for use on their cranes.
Bland proposed replacing the sentence that began: "If a replacement part is no longer available…" with "Any replacement part shall perform the same type of function as is permitted subject to the provisions of 4884.1."
Nypl thought the federal verbiage was better and should be used. However Bland opined that the federal verbiage "If a replacement part is no longer available, the use of a substitute device that performs the same type of function is permitted and is not considered a modification..." would permit permanent replacement with an alternative measure, and this is not what California has been allowing.
With regard to the proposed state verbiage, "alternative measures specified by the manufacturer" infers that a replacement part specified by the manufacturer shall be used and this has been problematic in the past. There was a proposal to replace "part" with "device." However, other commenters felt that "part" was more appropriate because maybe all that it needed is a part rather than a complete device.
Philips suggested using "part or device" which should cover both circumstances.
Nypl again asked what is wrong with using the temporary alternative measures permitted by the feds. He recommended striking "specified by the manufacturer" which has been problematic. Closson responded that when crane manufacturers specify alternative means they are looking at the whole crane and the crane systems and general alternative measures may not provide equivalent safety. He felt that at least three alternative measures didn't require manufacturer-specific alternatives. Chair reminded the committee that we would be looking at specific alternatives as we moved thru this section, and that we are just discussing the big-picture here.
Closson stated that the committee should not assume that each operational aid operates unto itself; they must be considered as a system and how they work together on the crane. Other commenters agreed that we should keep "specified by the manufacturer" in the proposal.
A question was raised about what to do if the manufacturer is no longer available? Closson suggested adding "if available" after "by the manufacturer."
After further discussion, the consensus verbiage read:

> "(c) If a listed operational aid stops working properly during operations, the operator shall safely stop operations until the device is repaired, alternative measures specified by the manufacturer, if available, are implemented, or the device is again working properly. Any replacement part or device utilized shall perform the same function as is permitted subject to the provisions of section 4884.1."

***Subsection 5018(d).***
As proposed, this subsection would have read:

> (d) Operational aids and alternative measures. Operational aids listed in this section that are not working properly shall be repaired no later than 7 calendar days after the deficiency occurs subject to the provisions of subsection (c). See section 5008.1(g) for additional requirements.

Chair noted that this section brings up the question of whether we want to allow any time for repair when operational aids malfunction. He noted that the last time the committee discussed this subject there was skepticism that allowing a period to repair operational aids could be abused; i.e. some contractors might try to tell the compliance officer that the device had just broken when in reality they had been operating for months with an alternative measure.

Nypl noted that almost all crane manufacturers permit the use of temporary alternative measures so he felt that allowing 7 days for repair is totally realistic. Closson inquired about operator certification testing; is the operator tested about what to do when an operational aid is out of service? Nypl said that his company includes questions based on the federal standards which allow 7 or 30 days depending on the type of equipment and federal categories. The federal categories and "grace periods" for repairs had been and continued to be a concern with many on the committee. Yarbrough commented that there is nothing in the law that requires operators to document when an operational aid becomes unserviceable, thus it is almost impossible for his inspectors to determine how long the devices have been out of service.

In response, Nypl proposed including a requirement in our proposal for documentation when there is a deficiency. He opined that the contractor is motivated to get the aid repaired because he often must have a spotter on the ground at $50/hr. as part of the temporary alternative. He proposed modifying the text to require that deficiencies be "documented prior to the end of the shift and repaired."

Yarbrough added, however, that while all on the committee are professionals, he deals with everyone from major firms to "mom and pop" operations in the field. The small operators are the ones they have the most problems with because they often are unaware of the rules. He said we need to write our standards to address those contractors.

Jacobs, going back to Closson's question about documentation, stated that there is already a requirement for daily inspections and that operator certification requires documentation and immediate repair of deficiencies (not 7 days later).

*[Ed note: Documentation of daily inspections is not currently required by the proposed standards]*

Vlaming was of the opinion that the state should use the same "grace periods" as the feds; i.e. 7 and 30 days. Nypl inquired that if we don't allow 7 days, how long should we allow for repairs to be made?

Bland opined that the committee should not focus so much on documentation but rather on operating the crane safely. He also resisted the notion that a crane is "broken" when a temporary alternative is being used. He added that we don't want to box ourselves in too much with regulations to where the job can't get done.

Closson noted that the feds don't have daily documentation requirements. He also added that operational aids are not safety devices, and the crane can be operated safely using temporary operational aids. Thus he supported allowing a period of time to get them repaired.

Chair noted that although daily inspections aren't documented, there is a requirement for the operator to report equipment malfunctions to the next operator at shift change.

Podue stated that while a machine can be operated without an operational aid, it is important to get them fixed as quickly as possible.

Chair summarized the discussion thus far that operating with appropriate temporary alternative measures will provide equivalent safety, but it is also reasonable to specify some maximum time during which they should be repaired or replaced. Although 7 days (based on fed regulations) is a somewhat arbitrary number, the discussion appeared to indicate that it might be a reasonable compromise.

The question remaining was documentation requirements; i.e., immediately, at shift end, or…? One commenter noted that section 5033 contains documentation requirements; however, Berg, for the Division, said that 5033 is not sufficient. Nypl proposed requiring that malfunctioning operational aids

be documented prior to the end of the shift. There appeared to be agreement with documenting prior to shift end.

Closson and Bland questioned the value of requiring documentation just for the sake of having another piece of paper. They felt that a parts order or repair order would be more useful. Berg was of the opinion that documentation of malfunctions should be required.

*[Ed note: The committee was unable to reach consensus on the appropriate action. To sum up, the most desirable outcome is to have all operational aids in proper working order at all times; however the committee realized that breakdowns will occur and the operational aid should be repaired promptly. When the inspector comes on the jobsite, he/she will want to know how long the aid has not been operating and what is being done to repair it. Many were of the opinion that parts/repair orders will provide a paper trail. Chair reviewed the committee discussion and subsection 5008.1(g) which is cross-referenced in section 5018(d), and is of the opinion that 5008.1(g) covers the concerns raised about documentation, thus no further modifications of subsection (d) are proposed at this time.]*

***Subsection (d)(1), Boom hoist limiting device.***

Chair commented that he hadn't seen this requirement in the GISO, and so he had brought it over from CSO Article 15.

Closson opined that the verbiage was probably based on B30.5-1968 because that's the edition used by the feds and that is why it has a 1969 effective date. He added that when we incorporate this into the GISO, it would also apply to tower cranes which, if they aren't luffing boom, don't have a boom angle indicator, but which do have a load radius indicator. He therefore recommended that we add a requirement for load radius indicator where applicable. Subsection (d)(1)(B)1 was therefore modified to read: "Use a boom angle indicator or load radius indicator, whichever is used." Chair noted that this appeared to be covered by subsection (d)(4) [1926.1416(e)(1)]. However Closson felt that it should be under (d)(1) to clarify its application to include luffing tower cranes.

Jacobs added a general comment opposing this and other temporary alternative measures. He added that if the boom hoist limiting device is not working, the crane should not be operating. Closson opined that we are talking here about portal, tower and mobile cranes with luffing booms, and the luffing boom motion is very slow, so he didn't see a problem with the alternative means proposed. However, for discussion purposes, all of (d)(1)(B) [equipment manufactured on or before December 16, 1969, and not equipped with a boom hoist limiting device] was proposed to be struck-out, thus the proposal would only have applied to equipment manufactured after December 16, 1969, in which case a boom hoist limiting device would be required.

Closson and Nolan opined that if (d)(1)(B) were eliminated, the requirement could be interpreted to require older tower cranes to be retrofitted with a boom hoist limiting device. Nolan added that if (d)(1)(B) were eliminated, there would be no requirement to do anything if the crane was manufactured prior to December 1969 and did not have a boom hoist limiting device. (d)(1)(B) only provided a list of other measures to be used if the crane was manufactured prior to 1969 and didn't have a boom hoist limiting device.

After further review and discussion the committee agreed to leave (d)(1)(B) as originally proposed. The state proposal is more protective than the federal verbiage for cranes manufactured after 1969.

Temporary alternative measures are only allowed for cranes manufactured prior to December 1969. Mr. Jacobs agreed with this assessment.

***Subsection (d)(2), Luffing jib limiting device.***

Jacobs said that luffing jibs can be 200' in the air, and the use of temporary alternative measures is not safe. Thus he recommended that the clause "Temporary alternative measures are the same as in subsection (d)(1), except to limit the movement of the luffing jib rather than the boom hoist" should be struck.

The committee broke for lunch. Upon return the committee took up anti-two-blocking devices.

***Subsection (d)(3), Anti two-blocking device.***

***(A) Telescopic boom cranes.*** The Chair commented that California already has OSHA approved standards for anti-two-blocking for telescoping boom cranes at section 4924(d)(1), and that temporary alternative measures are currently not permitted. The committee was agreeable to continued use of section 4924(d)(1) however there was discussion on whether to allow temporary alternative measures. Although some would have liked to allow temporary alternatives as permitted by the feds, Berg was opposed to any changes. Nypl asked that even if the feds and the manufacturer allow the use of temporary alternative measures, is California still going to insist on more stringent standards? Chair noted however, that subsection (c) permits the use of alternative measures specified by the manufacturer, if available.

Bare and Nolan later returned discussion to the question of why temporary alternative measures are not allowed. They opined that if the anti-two-block stops working on a crane manufactured after December 16, 1969, the crane must be shut down. In defense of Title 8, Souza noted that a crane can two-block when booming down, and the federal verbiage would not prevent this from occurring.

Nypl proposed modifying the temporary alternative to read:

> "Clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop ~~the hoist~~ to prevent two-blocking, and use a spotter when extending the boom."

Harkey noted that the last sentence of federal subsection 1926.1416(d)(3)(i) read:

> "The device(s) must prevent such damage at all points where two-blocking could occur."
> [Ed: thus implying that a device is required rather than using a spotter]

Chair noted that there appeared to be no consensus to make changes to the proposal.

Bland wanted the record to reflect that there had been a lot of committee discussion with several wanting to permit the use of alternative means [but Labor and the Division opposed]. However the proposal as it stands does not include that allowance. He also expressed concern about the statement in the rationale column of the worksheet that read "California does not permit this temporary alternative measure."

Since the committee had been unable to reach an agreement to make changes, and since, as had been noted previously, production does not appear to have been negatively impacted with the current Title 8 requirement, Chair determined that there was no consensus agreement for change.

*[Ed note: See 5018(c) which provides a limited alternative]*

***(B) Lattice boom cranes.*** Chair opined that California already has this covered with 4924(d)(2), except that California does not include fed exceptions for container handling, concrete bucket, marine operations that do not involve hoisting personnel, and pile driving work. The proposal was to cross-reference to 4924(d)(2)and leave the verbiage as currently in Title 8.
Closson recommended changing the "and" to "or" in the exception. He also opined that the federal text appears to be based on B30.5, and thus is appropriate for mobile cranes, but questioned its application to, for example, a lattice boom portal crane in general industry. Since the proposed cross-reference is to a GISO section for mobile cranes, and does not include the federal verbiage for cranes manufactured after Nov. 11, 2008, the Chair inquired whether it might be better to use the federal verbiage from 1926.1416(d)(3)(ii). There appeared to be no objection to using the federal verbiage.
There was no committee consensus regarding the use of temporary alternatives for lattice boom cranes (same split as for the foregoing crane types), so temporary alternatives will not be incorporated.

***(C) Articulating boom cranes.*** As above, the proposal was to refer to 4924(d)(3). The committee had no comments on the proposal. Temporary alternatives are not proposed since they are not currently in Title 8.

***1926.1416(e). Federal Category II operational aids.***
The chair explained that, based on discussions at the March 2015 advisory committee, he was not proposing a 30 day grace period for repair of operational aids, thus the state proposal only has one category for operational aids (7 day grace period).

***Section 5018(d)(4), Boom angle or radius indicator.***
Chair commented that, as with several other operational aids, the proposal was to include a cross-reference to the state counterpart section [4924(c)]. Denning commented that there was a problem with 4924(c) that should be corrected. It currently reads: "Mobile cranes shall be provided with a boom angle or radius indicator which clearly shows the boom angle in degrees..." He pointed out that radius is not measured in degrees. Ensuing discussion recommended changing 4924(c) to read: "Mobile cranes shall be provided with a boom angle or radius indicator which clearly shows the boom angle ~~in degrees~~ or radius distance…"

***Subsection (5), Jib angle indicator***.
Chair commented that California currently had no counterpart to the federal verbiage. He proposed to copy the federal verbiage into a new 4924(f). He inquired whether this would be any problem if applied to general industry. General industry representatives voiced no objection, so it was proposed to place the federal text into 5018(d)(5) rather than in 4924(f).

***Subsection (6), Boom length indicator*.**
Chair had proposed to cross-reference to section 4954(b), but he inquired whether this would also apply to general industry. Battaini asked why temporary measures weren't allowed.

Closson noted that boom length indicators are not standard equipment of cranes that don't have integrated computer systems. Furthermore, painting or marking on the side of the boom, in his opinion, is a marker, but not an indicator, although this is common in older cranes. He opined that the federal verbiage would require all older cranes to be upgraded with an integrated computer system.
Nypl, however, was of the opinion that paint on the side of the boom is an indicator of boom length. A commenter noted that "boom length indicator" is defined in 4885 to be a device or markings on the boom. Thus the committee was in agreement to cross-reference to 4954(b).
*[Ed note: by definition, markings on the side of the boom are permissible and the federal verbiage includes markings as a temporary alternative.]*

***Subsection (7), Load weighing and similar devices.***
***(A) Equipment (other than derricks and articulating cranes).***
Closson felt there were ambiguities in the federal temporary alternatives; for example, what must be the qualifications of the person making the determination, who or what is the source recognized by the industry, and who would determine the weight of a large assembly comprised of many component parts? Finally, all this information is turned over to the operator; does this place the ultimate responsibility on the operator for determining the accuracy of the load information? After some discussion he recommended modifying the temporary alternative to read: "The weight of the load shall be determined by a qualified person. This ~~information~~ weight shall be provided to the operator prior to the lift".

***(B) Articulating cranes manufactured after November 8, 2011 (federal), July 7, 2012 (state).***
Chair reviewed this proposal, noting that it uses a July 7, 2012 effective date which is the same as for CSO 1615.2 from which this was copied. The temporary measures would be the same as for (A) above. The committee had no objection to this proposal.

***Subsection (8), Devices required on equipment manufactured after November 8, 2011 (federal), July 7, 2012 (state).***
***(A) Outrigger/stabilizer position (horizontal beam extension) sensor/monitor.***
Closson commented that this subsection appears to address only horizontal beam extension, and is silent on "A-frame" and/or "X-frame" type stabilizers and other types. He felt that the federal verbiage was poorly written and would not apply to many cranes. He recommended copying verbiage from B30.5-2011, para. 5-1.9.3(d). However, none of the other committee members expressed support one way or the other on this proposal. There was no discussion about temporary measures.
*[Ed note: after comparing the federal verbiage with B30.5-2011, para. 5-1.9.3, it appears the federal is more general and might apply to more situations; therefore the federal verbiage, with minor modification, is proposed to be retained]*

***(B) Hoist drum rotation indicator.***
A commenter expressed concerns about allowing a remote video monitor as an alternative measure; however, the general consensus of the committee was to leave the verbiage as proposed.

This completed review of the Operational Aid worksheet, and the committee took a mid-afternoon break at this point.
*[Ed note on sections 5017-5018: Upon post-AC review of committee discussions, and a review of Title 8 safety devices v. federal safety devices and operational aids, several items have been relocated among sections 5017 and 5018 to be equivalent to federal standards except where existing state standards are more protective]*

***Sections 5006, 5006.1 and 5006.2, Crane Operator Certification.***
Chair explained to the committee that when he looked at combining crane operator certification from CSO with the GISO, it looked like the best approach might be to have separate sections for crane operators in construction versus those in general industry, thus the modified exceptions for section 5006, which would point to 5006.1 for general industry and 5006.2 for construction.
The only change proposed for 5006.1 would be to amend the title to read: "Mobile Crane and Tower Crane-Operator Qualifications and Certification (for Cranes in General Industry)."

***Section 5006.2, Operator Qualification and Certification (for Cranes and Derricks in Construction).***
Chair added that most of 5006.2 had been copied from CSO Article 15, so everyone should be familiar with the requirements.
There was some discussion about certification versus qualification, and about the discussions going on at OSHA in Washington on that subject as well as the certification by type and capacity and other subjects as well. Those in the committee who were familiar with the on-going discussions indicated that there will likely be many changes resulting from those discussions. Chair stated that until those changes are promulgated, we can only go with what we currently have from OSHA.
Closson, who was familiar with the deliberations, stated that we are likely to see a "major re-write" of the federal standard and it might be best for us to wait before incorporating the present OSHA operator certification standards. He also opined that, due to the on-going discussions in DC, this subject might be better dealt with as a separate rulemaking. He added that California's current GISO standards for crane operator certification are better than what the feds currently have (which are limited to construction). Also, the timing of federal changes is unknown, but could be years away. Nypl agreed.
Yarbrough reminded that CA must be at least as effective as the federal requirements in the interim until the federal standards are changed. Closson opined that CA is more protective because we haven't adopted some of the less restrictive federal requirements.
At this point the committee was in favor of deleting proposed section 5006.2 and just retaining 5006.1 for all crane operators until the feds decide what to do.
Nypl had a question about certification by capacity. Closson gave a brief history of how capacity got into the federal standard. The root problem is that no one has yet determined what capacity is different enough to require separate training and testing for the operator. This is one of the issues the feds are dealing with. Thus the committee consensus was to retain 5006.1 and delete 5006.2.
*[Ed note: Minor amendments have been added to 5006.1 to provide equivalency with 1926.1427]*

***Section 5001.3, Signal Person Qualifications.***

Chair opened discussion by noting that since this section was from 29 CFR 1926, he was proposing to title the section "Signal Person Qualifications (for Cranes and Derricks in Construction)" however, we could change the title if it applies to general industry as well. The decision was made to review the rest of the section before deciding on the title.

***Subsection (a)(3), Record keeping.***

Pena raised the issue of why the training records need to be located on-site. For some employers with centralized training records this could be problematic. He wanted to know why training records need to be available on-site.

Yarbrough (Caltrans) responded that they and contractors need to know the qualifications of the riggers and signal persons they may need to work with. He said this documentation could be on a card, or could be electronic and made available on the employee's cell phone. Yarbrough said that often employees show up at the jobsite without this documentation and Caltrans has had to stop operations until the documentation is faxed to the prime.

Pena felt that this information could be provided before the start of the job. However, the Division felt the documentation should be provided at the jobsite. Pena countered by asking how much documentation does the employer need to have available on the jobsite; first-aid, heat-illness prevention, fall protection, etc.? He opined that this is an unnecessary burden on the employer.

Bland stated that "at the end of the day," the employer is responsible to insure that they send out qualified employees to the jobsite. If any questions arise, the employer can FAX requested documents to the jobsite.

Jacobs didn't think the requirement was burdensome; he said that crane operators need to carry their card and so can the signal person. If the employee forgets to bring their card then they don't get to work.

Closson opined that there is a subset of tasks for which a person can be qualified (for example: language, signal and crane types) and that a single card would not be suitable to list the applicable tasks.

Bland argued that we need to put this requirement into perspective. There are hundreds of regulations many of which require training and/or documentation. Adding a requirement for documentation is going down a slippery slope; how many pieces of documentation will it be necessary for an employee to carry? Bland also commented on an earlier suggestion that we add "upon request" to the proposal. He said that adding a requirement to provide on request is subject to interpretation and that he has a case right now involving a dispute about how promptly a document needs to be provided "upon request."

An unidentified speaker argued that the documentation requirement was in the CSO, and therefore we need to have a good reason for removing it when it is transferred to GISO. Chair reminded the committee that the CSO was adopted as a "Horcher" with minimal comment, so this is really the first time this requirement has been looked at critically in California.

McCrary added that this documentation should be obtainable electronically, so it shouldn't be a problem. Smith suggested adding verbiage to permit documentation to be provided electronically.

Bland distinguished between certification (e.g. crane operator) which the employee carries and training records which are typically maintained in a central location. Signal person training does not require

certification. This requirement would open the door to requiring employees to carry their training records with them, often to multiple sites in one day which complicates the requirement.
Wright emphasized that the key is that the employee is trained for the task(s) to be performed. If documentation is required to prove the training, it can be obtained electronically.
Harkey opined that employees evaluated under Option 1 are more likely to have documentation with them (since it is portable) whereas Option 2 is by the employer and is not portable. Under Option 2 the employer would likely hold the documentation.
Caltrans and some others had favored signal persons carrying training documentation. Wright reminded the committee that Cal-OSHA standards are minimum requirements. There is nothing that would prohibit Caltrans or others from requiring employees/contractors to carry training documentation, but he asked that not all employers be saddled with requirements which may be necessary only for their specific needs.
Closson added that although Title 8 requires crane operators to be certified, they are not required to carry their certification card to the site.
Discussion continued on the pros and cons of requiring signal person training documentation to be available at the site, and how best to provide that information. In the end, Caltrans and others agreed they have other tools available to get necessary training documentation without this requirement, thus there appeared to be agreement to strike "at the site."

***Subsection b, Retraining.***
Closson opined that the last part of the last sentence, "that confirms that the individual meets the qualification requirements" could be confusing and raise the question whether something in addition to subsections (a) and (c) is required. He recommended deleting this clause. There were no other comments on subsection (b).
*[Ed note based on subsequent review: the clause was retained; it is clear that the criteria are the "Qualification Requirements" of subsection (c)].*

***Subsection (c), Application to General Industry.***
When the qualification requirements were reviewed, Berg questioned why general industry should be excluded from this requirement [the section title has been proposed with a parenthetical "for Cranes and Derricks in Construction."
Both the ILWU and PMA had concerns about striking the parenthetical and applying these requirements to marine terminals since they have their own training program and agreed upon signals which have been published in the Pacific Coast Marine Safety Code.
There was agreement to strike the parenthetical "for Cranes and Derricks in Construction" provided that an exception would be carved-out for marine terminals.

***Subsection (c)(1) and (c)(5), Qualification Requirements.***
Closson recommended deleting from (c)(1) the sentence reading: "If hand signals are used, the signal person shall know and understand the Standard Method for hand signals." He observed that California does not have "standard hand signals;" we have recommended hand signals.

With regard to (c)(5) he recommended clarifying it by adding "of the signals to be used" at the end of the sentence.
The committee had no objection to these changes.

***Section 5033.1. Qualifications of Maintenance & Repair Employees.***
Ferris expressed a concern about the (a)(2)(A) reference to 5006.1 for crane operator qualification and certification because marine terminals are exempt from this requirement; and he felt this reference might apply it to them. However, it was pointed out that section 5006.1 includes an exception for marine terminals. Furthermore, the clause "as applicable" should further prevent misapplication of the standard.

***Section 5012. Training – Additional Requirements for Cranes.***
Chair stated that a lot of federal 1926.1430 (Training) is covered in state section 3203 and elsewhere, so he only added requirements from 1926.1430 for which he didn't find state counterparts. He also titled the section as "additional requirements for cranes" since these requirements appeared to be specific to cranes.
Closson stated that this section appears to have been written for mobile cranes and it does not apply to other crane types.
With regard to (a)(1), when moving a boom off its support, Closson recommended following the manufacturer's instructions. However, Bare questioned what would apply if the manufacturer's instructions were no longer available. A suggestion was made to retain the federal verbiage and add on a clause to require use of the manufacturer's instructions where available.
Finally, Closson recommended amending the section title since (in his opinion) this procedure only applies to lattice boom cranes.
*[Ed note: Post-AC modifications have been made to section 5012 after reviewing the committee discussion and comparing with federal text in order to assure state standards at least as effective as federal]*

The committee was in agreement with these changes, and recessed for the day at 4:15 pm.

**Thursday, July 23, 2015 (Second Day).**

**1. Opening remarks.**
The meeting was called to order by Chairman, Conrad Tolson, Senior Engineer, OSHSB, at 8:35 am. Chair was assisted by Leslie Matsuoka, Program Analyst, OSHSB. The Chair reminded those in attendance to please sign-in for the second day; he also requested business cards if available. The meeting opened with self-introductions by those in attendance, including members and interested parties. Mr. Jones inquired whether an audio copy of the meeting proceedings would be available if it became necessary to request one. He was advised that written minutes will be provided to all attendees who have signed the attendance sheet and to those on the invitation list. An audio copy of the proceedings can be obtained upon request.

***Inspections and Maintenance.***

Chair noted that sections 5020-5021 which cover part of this subject were reviewed at the March Advisory Committee. The results of that review have been included in the "work-in-progress" Form 9 which was sent out with the invitation for this AC as well as being posted on the OSHSB website.

***Section 5022. Proof Load Test and Examination of Cranes and Their Accessory Gear.***
***Subsection (a)(1), Cranes exceeding 1 ton rated capacity.***

Chair introduced this section by noting that there has been some confusion about proof load testing requirements for cranes over 1 ton rated capacity vs. cranes over 3 tons rated capacity, so he split out the requirements by capacity range. Cranes over 1 ton but less than or equal to 3 tons will only require an initial proof load test, but will not require quadrennial testing after the initial test.

Closson opened by stating that the federal standards have no requirement for load testing. He cited an example of how this proposed testing requirement for cranes over 1 ton would work. He stated that there are countless hoists and cranes out there for which load testing would be required if this requirement goes thru. This will have a huge impact. He also questioned the safety of testing the devices to 125% of rated capacity. If the feds don't require this, then why are we?

Chair responded that he had interpreted the functional testing requirements of 1926.1427(a)(1)(ii) to include proof load testing. Closson explained that functional testing does not include proof load testing. He added that when California established the requirement for proof load testing they based it on 29 CFR 1919 which is for maritime, and that 29 CFR 1919 provides that functional testing shall only be done at part load.

Closson reiterated that subsection (a)(1) will have a huge economic impact without any proven need.

Chair noted that the Labor Code (sec. 7375) only requires proof load testing for cranes over 3 tons rated capacity. He thus proposed that proof load testing for cranes over one ton and not exceeding 3 tons [subsection (a)(1)] should be removed from the proposal.

*[Ed note: section 5022(a) has been returned to its unmodified state and the federal requirements have been relocated to new sections 5031.5 and 5034(g)]*

***Subsection (a)(2), Additional requirements for cranes over 3 tons rated capacity.***

If subsection (a)(1) is deleted, "Additional" will be deleted from the title of (a)(2). However, because some of the federal requirements of 1926.1412 may apply to cranes exceeding one ton capacity and since section 5022 currently applies to cranes over 3 tons, Chair indicated he would have to go back and review the Side-by-Side to be sure CA incorporates any unique federal standards, but not require proof load testing for cranes under 3 tons rated capacity. For purposes of discussion at the AC, and to assist the committee in seeing what requirements remained, subsection (a)(1) was struck out. Chair said he would review the deliberations and modify section 5022 accordingly then send it out with the minutes for committee review.

Closson also inquired about the issues raised with section 5022 that Maryrose Chan had looked at. Chair was not sure whether those issues could be resolved within the scope of this AC, but said he would review them as part of amending and modifying Section 5022.

***Subsections (b) and (c).***

No changes were proposed for these subsections (no comments).

***Subsection (d), Examination to be carried out in conjunction with each proof load test.***
Closson inquired about the prefatory sentences:

> "The certificating agency shall determine if repairs/adjustments meet manufacturer equipment criteria (where applicable and available). Where manufacturer equipment criteria are unavailable or inapplicable, the certificating agency shall make a determination as to requirements for the correction of deficiencies found."

He postulated that these are unnecessary as all this is included in Section 4885, Plate V, Certificate of Unit Test and/or Examination of Cranes and Derricks Used for Lifting Service. He added that this statement may be necessary for the feds because they don't have the requirements we already have in sec. 5021 which requires "certificates (annual and quadrennial) attesting to current compliance with testing and examination standards…"
Bland was inclined to agree that consistency is important. He stated that whenever changes are made, they can open the subject up to interpretation that perhaps the intent was to require less than before. He opined that the more that we can stay with our existing standards, while still remaining ALAEA, the better.
Thus, there being no objections, the decision was made to delete the prefatory sentences.

***Subsections (d)(1) thru (d)(3).*** A minor grammatical correction was made to (d)(3) per Closson and Bland comments. No other changes to these three subsections.
***Subsection (d)(4) thru (d)(13).*** Current text - no changes proposed.
***Subsection (d)(14) thru (d)(15).*** No comments.
***Subsection (d)(16), Operator's seat.*** Closson questioned whether the presence of an operator's seat ranks with checking welds for cracks, etc.; however, Jacobs commented that he has seen crates being used as makeshift replacement for missing operator seats, so this item is worthy of inclusion on the list. Closson added that not all cranes are equipped with operator's seats. Phillips added that some newer cranes integrate controls into the seat, and these need to be checked for proper operation. Ultimately, the operator's seat was retained on the checklist with the parenthetical "when applicable" being added to account for cranes not originally equipped with an operator's seat.

***Subsections (d)(17) and (d)(18). Originally equipped steps, ladders, handrails, guards.***
Closson questioned including "originally equipped" in the heading for (d)(17) as B30 standards include requirements for equipment access and a lot of steps and ladders may be added later to provide access. Upon further examination, the committee noted that subsection (d)(18) covered all these items and was more clear.
Discussion turned to (d)(18). Pena liked "originally equipped" as he opined it would provide objectivity vs. an inspector arbitrarily requiring ladders. The intent of the committee was to avoid verbiage that could be misinterpreted to permit an inspector from arbitrarily requiring placement of new ladders, etc. Bobis recommended adding "where provided" to cover original equipment. He subsequently recommended adding "or required" to cover guardrails and handholds that may be required at elevated locations by section 3210.

*[Ed note: "or required," has been modified to "or required by other sections of these Orders" to avoid arbitrary requirement by inspectors]*

Bobis also recommended adding the term "handhold" to the requirement. There was considerable discussion on "handhold" as the term is not defined in sec. 3207, but it is used in section 3210(d)(9). Bobis asserted that "handhold" should be included. He added that it is a "California term" and noted that 3210(d)(9) states that a handhold can be used where a handrail is impractical. Ultimately Bland said he was ambivalent because in his opinion the term is without meaning.
*[Ed note: "Handhold" is also found in other places in T8. It will therefore be left in the proposal.]*

***Subsection (d)(19) , "Such other examinations deemed necessary under the circumstances."***
Bobis opined that this is an open-ended citation. Chair noted however that this is an existing requirement [currently at (d)(14)] and, other than being renumbered, no change is proposed. Closson saw this section as more as a means to enable the inspector to identify anything that should be done or provided that is not on the list. Bobis said that his company has had problems with crane inspectors citing "off the wall" requirements under this section. Bobis said he would either like to see this section deleted or more limited in nature. He offered to come back with some suggested verbiage for the subsection.

***Section 5023. Proof Load Test and Examination of Derricks and Their Accessory Gear.***
Chair noted that the only change proposed is to subsection (b) to add more specific requirements under (b)(1) for hoist and brake testing.
Closson noted that our testing requirements already cover these provisions under functional testing and Section 4885, Plate V.
Bland added that the fed verbiage also requires that the hoist shall not be used unless a competent person determines that the test has been passed. This is less stringent than California's requirement for this determination to be made by a certified agent.
It was decided to strike the proposed addition as being unnecessary.

***Section 5031. Inspection.***
***Subsection (a), Each shift.***
Closson opined that the proposed modifications which would not require booming down would be a reduction in state standards. For a large boom crane it may not be practical to boom down for each shift, but there are countless smaller cranes where it is entirely possible and desirable to boom down at the start of each shift. In response, Chair proposed to remove the booming down provisions.
Jacobs and Pena were concerned about having to boom down for shift inspections; however, the verbiage as modified, will be silent on booming down (as it is currently). Closson added that our current standard has never required booming down for the shift inspection.
Pena gave an example of his concern: they can have cranes working a project, supporting poles/towers and conductors, and the project may take more than one shift or perhaps days to complete. It is just not practical to boom down or do any of the shift inspections in this condition. He noted that the current verbiage provides: "prior to the first operation on any work shift,..." He reiterated that in the

example cited, with cranes supporting poles, towers and/or conductors, it might not be possible to do this inspection. Closson clarified that in the case cited by Pena, they would have inspected the cranes prior to the first operation, but now they are all supporting loads and are locked in place and it is not possible to inspect the rigging and controls in this condition. The regulatory problem was created by relocating "each shift" to the beginning of the paragraph, making the requirement more restrictive than what we currently have.

Bland asked "what is the necessity for this change?" He opined that we already have the requirement in place and everyone understands how it works. The feds are just trying to catch-up to us. He opined that the effect of our standards is the same, but problems are introduced when we change the verbiage. There was more discussion. Bland stated that the key is "the first operation…", thus once the crane has been properly inspected and has hoisted a load into position, another inspection is not needed until the crane is operated again.

Closson also raised an issue with the proposed addition of "visual inspection or trial operation" to the opening paragraph. Inspection and operation are not the same, and their inclusion here also opens the intent to interpretation. He noted that they are already required by existing (b) and (b)(1). Furthermore he felt that "further investigation" is already covered by "Any unsafe conditions disclosed by the inspection requirements of this Article shall be corrected promptly." After reviewing all the proposed new text he opined that the new wording does not add anything to what we already have in subsection (a). Bobis agreed.

There appeared to be consensus to remove the proposed changes to 5031(a) and return it to its current state.

***Items subject to the shift/first operation inspection.*** *[Ed note: subsection (a) has been renumbered to subsection (b) post-AC; however the paragraphs below use subsections as reviewed at the AC]*

***Lead-in sentence and Subsection (a)(2) and (3).*** Closson commented that these items could cause confusion for mobile cranes. He stated that the intent appeared to be for these to apply to the "upper", but "drive mechanisms" could be interpreted to apply to the "carrier" upon which the crane was mounted. He added that we don't want to make the crane operator a mechanic; however, the Division commented that the PTO should be checked if applicable.

Pena agreed with Closson that (a)(2) was worded vaguely and the inspection could go all the way back to the vehicle's engine.

Souza noted that power for some cranes is mounted on the superstructure.

It was becoming apparent that drawing a line on how far to go back with the drive mechanism can vary depending on the type of crane. Closson opined that this checklist was written with a crawler crane in mind, but the scope is more problematic when applying to many different types of cranes in general industry. A labor representative also noted that this ambiguity could get into jurisdictional issues as well.

It was noted that the requirement was for a <u>visual</u> inspection by a qualified person, thus it shouldn't cause jurisdictional issues.

Closson proposed putting the word "contamination" before "deterioration." This would address part of the problem with (a)(2). He also suggested changing "control and drive mechanisms" in (a)(2) to "crane motion mechanisms."
Nypl opined that the inspection should be performed by a "competent" person rather than a "qualified" person. However further discussion determined that, based on California definitions of those terms, "qualified" was the appropriate term to use.
Closson recommended editing the lead-in sentence for the checklist. The clause "all of" was too restrictive as not all items on the checklist apply to all types of cranes. Thompson and others agreed.

There was more discussion on (a)(2), control and drive mechanisms and how far up the (drive) chain the inspection should go. Closson reminded that traditionally the daily inspection is just a visual inspection to check for anything that might have happened since the last visual/shift inspection. The intent is not to get "under the hood." Phillips agreed that if something unusual is observed on the visual inspection, then the operator should call out an appropriately qualified person to investigate further and make repairs if needed.
Farris noted that federal verbiage speaks of an inspection of "functional mechanisms," and posited that term might be better than "drive mechanisms." It was then noted that "functional mechanisms" is already used in (a)(1). The committee considered deleting (a)(2) and consolidating requirements into (a)(1). Farris noted that (2) includes inspecting for excessive wear and contamination, so these items were combined into (1) and (2) was stricken as being unnecessary.
A speaker asked whether we need "contamination" in (1) since it is covered in (3). Ultimately the committee determined to have it in both places since they opined if could address different type of contamination.

***Subsection (a)(5).*** Closson commented that it is not necessary to specify what might cause damage to the hook; just require inspection for damage.

***Subsection (a)(8).*** Closson recommended clarifying that the wire rope is in compliance with the <u>crane</u> manufacturer's specifications.

***Subsection (a)(9).*** Closson recommended deleting "apparent." He opined this is superfluous since this is a visual inspection and only apparent deficiencies will be detected.

**Subsection (a)(10).** Closson recommended clarifying by deleting "when in use" and replace with "tires when used to support the lifting operation."

***Subsection (a)(11).*** Closson recommended modifying and clarifying as follows: "Ground conditions around the <u>crane support system</u> ~~equipment for proper support~~, including ground settling ~~under and around outriggers/stabilizers~~ <u>and</u> ~~supporting foundations,~~ ground water accumulation~~, or similar conditions~~."

***Subsection (a)(12).*** Closson recommended modifying/clarifying as follows: "The ~~equipment~~ crane for level ~~position~~ within the tolerances specified by the ~~equipment~~ crane manufacturer~~'s recommendations, both before each shift and after each move and setup~~." *[Ed note: The last part of the sentence will be retained for equivalency with fed standards]*

***Subsection (a)(13).*** Closson recommended deleting "significant" as he opined the federal verbiage is difficult to enforce and the proposed modification clarifies the intent to prevent anything that impairs the operator's view. Silbernagel recommended changing "hamper" to "impair" for the same reasons.

***Subsection (a)(14).*** Closson opined that the scope of this requirement is excessive. He gave as an example a large construction facility with a large number of rails spread out over 180 acres. Not all those rails and rail stops will be used each shift, and in his view, (a)(11) would include rail-mounted cranes. Souza said he had experience building roof-mount rail systems, and he felt that (a)(14) is necessary to cover unique installations such as this. There was discussion on how to address the concerns. Closson wanted to include verbiage that would not require operators of overhead cranes from having to walk the rails each day which, in itself is hazardous.
Bland opined that the daily checklist is getting pretty extensive for something that is just intended to be a pre-operational check.
At this point (a)(14) read: "Rails, rail stops, rail clamps and supporting surfaces limited to the path of travel when the equipment has rail traveling" (with an exception for railroad tracks are part of the general railroad system.
Closson opined that the feds were only concerned about tower cranes on rails and that, by virtue of including this in general industry, we were capturing portal cranes in a large construction facility, which was not envisioned when the feds put this item on the checklist. He noted that some rail clamps are "positional" and require a crane to run to a fixed location to be clamped down before starting work.
Bland and Farris agreed with Closson that this check item is unnecessary for a daily inspection.
Souza speculated that perhaps we could avoid over-reach by limiting the scope.
Closson recommended focusing on ground mounted (vs. overhead cranes). It is not safe or practical for overhead crane operators to walk the rails for inspection. He added that CA doesn't currently have a requirement for rail clamps and that including them as an inspection item could be interpreted to require them. He continued to assert that we just use (a)(11) and that (a)(14) is problematic, particularly for general industry.
Bland proposed limiting the path of travel to "planned/intended path of travel."
Based on Closson's earlier comment, the verbiage was also modified to "ground-mounted rails,…"
Farris noted that they have cabs riding on rails 130 ft. in the air, and they have an agreement with PMA as to what needs to be inspected. He objected to limiting the inspection only to ground mounted rails.
It was becoming apparent that applying (a)(14) to general industry was problematic. A suggestion was made to just delete this requirement due to the issues encountered. This requirement is in excess of what is currently required for daily inspections and many of the committee seemed to feel that the intent of this particular requirement was already covered in the overall scope of the daily inspection without the need to get so detailed. Furthermore, this item has a very limited scope of application and does not apply to probably 99.9% of general industry. Closson found in 29 CFR 1910.180(a)(32) that a

rail clamp only applies to a locomotive crane. However, by incorporating the requirement as proposed in T8, and without defining what a rail clamp is, it would apply to anything mounted on a rail. The committee was unable to reach agreement on this requirement. A decision was made to break for lunch and revisit this issue after the break.

Chair had discussed subsection (a)(14) with Closson and others during the lunch break and noted that this is a federal construction standard [1926.1412(d)(1)(xiii)]. Applying this to general industry is problematic; however, its intended application appears to be limited to locomotive and hammerhead tower cranes in construction. Souza wanted to also include special application roof mounted cranes in construction. An agreement appeared to have been reached to limit to those types of cranes and limit to construction applications.

Having decided to limit scope to locomotive, hammerhead and specialty cranes in construction, it was also decided that limiting inspection to the intended path of travel was not necessary since these types of cranes typically do not have long travel paths. *[Ed note: minor editorial modifications have been made for clarity]*

***Subsections (a)(15) and (16).*** Reviewed without comment.

***Subsection (b), Periodic inspections.***

***Subsection (b)(3).*** Chair noted that the feds require documentation on monthly inspections and we require documentation on quarterly inspections. Closson noted that CA requires more items to be inspected on the quarterly than the feds require on their monthly. Furthermore he was of the opinion that the feds had approved our quarterly/750 hour inspections as being equivalent to their monthly inspections. Furthermore, this has been in the books for over 10 years without federal challenge. Closson also noted that CA requires verification on the annual inspection that the crane is being maintained properly and this includes verifying that quarterly inspections are being performed. Furthermore, CA requires inspection reports to be maintained for a full inspection cycle, thus quarterly inspection records should be maintained for 12 months rather than the 3 months per the federal text. He also recommended changing “checked” to “inspected.”

***Subsection (c), Annual/comprehensive inspections.***

Chair explained that, except for adding a title, the first four subsections were unchanged.

***Subsections (c)(5) thru (c)(7), Deficiencies.*** Closson noted that the verbiage amounts to a conditional certification which is not permitted by the Division. There was agreement to delete (c)(5) thru (c)(7) because they allowed conditional certification which is not permitted by s. 4885 Plate V and by the Division.

***Subsection (c)(8), Documentation of annual/ comprehensive inspection***.

Closson recommended changing “checked” to “inspected” and changing the document retention period from 12 to 48 months because of California’s quadrennial inspection requirement. Also, in the 2nd sentence, “the name and signature of the person who performed the inspection” could be problematic on large cranes because several individuals could be performing different inspections; e.g. wire rope,

mag particle, mechanical, etc. He recommended that we just require the inspection record to be signed by a licensed certifier (as currently required by Plate V).
After further discussion it was recommended to delete "the date of the inspection, the name and signature of the person who performed the inspection, and the serial number or other identifier of the crane inspected" as these are already required on Plate V. Closson also recommended changing the term "all documents" to "certification documents" to be more precise.
Upon final review before moving on, Closson also recommended striking "that conducts the inspection" from "by the employer that conducts the inspection." This is because the feds allow the employer to do the inspection, and California requires a 3rd party inspection.
*[Ed note: Further modifications and clarifications have been made to this section based on post-AC review of committee deliberations]*

Nolan inquired again about equivalence of the state quarterly inspections with federal monthly inspections. See rationale for the difference under (b)(3) above. Closson added that California also requires a maintenance program which the feds don't [sec. 5033]. Chair opined that the SXS shows CA equivalency with federal inspection requirements.
Nolan also inquired about the allowable hook deformation in (c)(1) and whether there would be any objection to using the ASME B30.10 standard (5% throat opening and no twist) which is more stringent. Closson said that the state criteria are based on old standards and personally he would not oppose updating to the new B30.10 standard; however the current state criteria are equivalent with the current fed criteria. Chair ascertained that the state standard for hook deformation is equivalent to the fed criteria, and we have not adopted the newer version of B30.10 as a referenced standard; therefore there did not appear to be any inconsistency as presently written.

***Section 5031(d). Manufacturer's procedures regarding inspections that relate to safe operation.***
Closson said that manufacturer's recommendations for inspections are based on hours of operation and do not correspond with daily, quarterly and annual intervals used by the state and feds. Furthermore, a lot of cranes aren't equipped with hour meters, so this requirement can be problematic, and he questioned whether we can codify an unknown requirement (something not in our books). There was more discussion on how to provide equivalency for the federal requirement.
Closson suggested that if we want to require compliance with manufacturer's procedures, section 5033, Maintenance, might be the best location for this requirement. If we used 5033, all we would need to do is add manufacturer's procedures to certified agent's recommendations for inspection and preventive maintenance and all the extra wording from the federal version would not be necessary. He noted that the manufacturer, by definition, is a certified agent, and he opined that by virtue of placing it in section 5033, it would shift the responsibility from the crane certifier to the crane owner, where the responsibility should lie.
There was a question that, if this is a federal construction requirement, should we be applying it to all cranes. Closson noted that this crane could easily move between construction and general industry duties, and thus is makes sense to place it in the general industry requirements.

*[Ed note: Adding" inspection" to 5033 would have had consequences not apparent at the time it was proposed, and could have made the certified agent's inspection recommendations supersede T8 requirements (even if less protective); therefore sec. 5031(d) will be retained as-is.]*

***Section 5036. Inspection – Wire Rope (Additional requirements for cranes in construction).***

The committee started by reviewing subsections (a) through (c)(1) [Category I deficiency].

Closson opined that the intent of these categories seems to be to determine how "wrong" a rope is and thus when it should be removed from service.

***Subsection (a)(1).*** Closson asked:

- What is "significant" corrosion (how much and where)?
- What is a "significant" crack (how big and where)?

He saw this section as a comprehensive change, and he opined that it will be difficult to enforce. He added that when he has done accident investigations he has not found operators or inspectors that have the qualifications to make the determinations required by this section.

Chair opined that this section requires more thoughtful review by stakeholders; probably during the 45-day comment period.

Silbernagel added that criteria can vary from one rope manufacturer to another and depending on the type of wire rope. He added that the federal criteria might conflict with manufacturer's recommendations, and in that case, which criteria does one go with?

Closson had been involved in the CDAC and said that, in his opinion, the concept of categories was developed to keep cranes operating with damaged ropes. He agreed with Silbernagel that wire rope inspection criteria vary from one rope type to another and added that they can also vary from one crane type to another.

Both speakers felt that the federal standards were problematic and would conflict with wire rope manufacturers' inspection criteria.

Closson doubted that the federal wire rope inspection criteria would get through stakeholder review in its current form, however he didn't know how open the feds would be to changing it. He added that every crane manufacturer includes wire rope inspection requirements in their manual; however, most of the time the requirements are just copied from the rope manufacturer's manual. Therefore he suggested we just require compliance with the manufacturer's specifications for the crane. Another speaker agreed that they use the rope manufacturer's inspection criteria.

Chair noted that the wire rope inspection criteria proposed in 5036 also do not match up with those listed in 5031 (annual/comprehensive). He said he would take this matter under consideration and see whether anything can be done or whether this would have to be worked out during the 45-day comment period.

Closson suggested that if we were to remove subjective requirements containing words like "significant" and with the exception of (a)(2)(A)2 [which he didn't think we currently cover], he thought we might have everything else covered in our own inspection requirements [sec. 5031(c)], maybe not using the same exact wording. He further opined that anything we may not have is perhaps because it is not measurable and therefore we shouldn't have it. This would cover subsection (a).

Another speaker mentioned that Samson (a synthetic rope manufacturer) is coming out with synthetic hoist ropes which will further complicate applicability of the federal standards.

*[Ed note: Based on comments received at the AC, section 5036 has been significantly revised. However, in Chair's opinion, the matter of synthetic ropes may need to be dealt with by variance due to new technology and the number of factors that could enter into a determination of its suitability for a particular application]*

***Section 5037. Wire rope – selection and installation criteria.***

***Subsection (a).*** Closson noted that the B30 standards we incorporate include criteria for original equipment wire rope, and thus the first sentence should be deleted as being overlapping and potentially problematic. We should start at the 2nd sentence on replacement rope and the replacement should be in accordance with the crane manufacturer or a qualified person. He added that the rope manufacturer is usually very difficult to contact and their distributor may or may not be qualified to make recommendations; however "qualified person" will include the wire rope manufacturer if they can be reached. When questioned about including the "wire rope manufacturer" he said that the term could be interpreted to be the distributor. The distributor can represent a number of manufacturers which could influence their recommendation, thus he did not recommend using the term "wire rope manufacturer." Inclusion of "qualified person" will also open the replacement process to qualified competition so that the manufacturer won't be in the position of being the only supplier.

***Subsection (b), Wire rope design criteria.*** Closson recommended deleting this section because we already cover design requirements in section 4884, Standards incorporated by reference. The committee had no objection.

***Subsection (c).*** "Wire rope shall be compatible with the safe functioning of the equipment." No comment.

***Subsection (d), Boom hoist reeving.*** Closson observed that these are design requirements which are already covered by section 4884, Standards incorporated by reference, thus this subsection should be struck.

***Subsection (e), Rotation resistant ropes.***

***Subsections (e)(1) through (e)(3)*** were recommended to be deleted as overlapping and, in some cases, conflicting with referenced standards in section 4884. Furthermore, these criteria could conflict with the crane manufacturer's criteria in subsection (a).

***Subsection (e)(4), Additional requirements for rotation resistant ropes for boom hoist reeving.***

Chair asked the Division if these requirements would be useful for them. Their response was that they are redundant, and that they are already covered by subsection (a).

Closson opined that these are all design issues and, if enforced, could potentially conflict with manufacturer's recommendations. Furthermore they place responsibility for verifying that the crane has been designed and manufactured correctly upon the employer.

There was discussion whether to delete (e)(4) entirely as many felt it was already covered in (a). However, in the end, it was decided to modify (e)(4) to read: "Rotation resistant ropes shall not be used

for boom hoist reeving, except where the requirements of the crane manufacturer state otherwise. " (Verbiage provided by Bland)

***Subsection (f), Wire rope clips.*** This section was reviewed and it was initially decided to leave as-is.
***Subsection (g), Socketing.*** Closson said that the employer does not have the equipment on-site to do this and that he would send the rope to a shop to have the socket pressed on. The way this is worded, it makes the employer responsible for something done someplace else. He noted that we don't require the employer to ensure socketing on a sling, so why are we doing this? After further discussion by the committee, Closson suggested that subsections (f) and (g) could be combined to read: "End terminations on wire rope shall be installed in accordance with the termination or rope manufacturer's specification." The committee was in agreement.

***Subsection (h), Seizings.*** Closson and another speaker opined that, while the verbiage is correct, they didn't feel this is the appropriate location; furthermore, it was observed that this is already covered by subsection (a).

This concluded the section-by-section review for this Advisory Committee.

**5. Conclusion.**

Since this is an on-going rulemaking, the minutes, work-in-progress proposal (Form 9) and Side-by-Side will be distributed to attendees before the next meeting. The committee will have an opportunity to review the proposal as it currently stands along with the minutes. If they see anything in the draft which is other than their recollection of what had been agreed to, they should send their comments to the Chair. These concerns can then be reviewed at the next committee meeting. The Chair reminds committee members to keep-in-mind that the proposal they have in-hand is a preliminary draft and that it should not be presented to others as what Cal-OSHA is going to do. Until the new rulemaking is formally adopted, the existing CSO and GISO crane safety orders will remain in-effect.

The Chair thanked the committee members for their attendance and participation and adjourned the meeting at 3:00 p.m.