

U. S. Department of Labor
Occupational Health and Safety Administration

Cranes and Derricks Negotiated Rulemaking Advisory Committee

Meeting Summary - December 3-5, 2003

Agenda Review

C-DAC members reviewed and accepted the December meeting agenda.

Review and Approve November 5-7 Meeting Summary

C-DAC members reviewed the November 5-7 draft meeting summary and made two minor editorial changes. It was approved as final and will be available through the OSHA docket.

Review Issues Update and Schedule

C-DAC members reviewed a list of issues that included new issues to be discussed; issues discussed and draft regulatory text reviewed; and issues discussed and regulatory text not reviewed. The Committee set a tentative goal of discussing all the new issues by the end of the February meeting so that at the March meeting, C-DAC may have draft regulatory text for all issues and might begin to finalize each section of the standard.

Presentation on Crane Fatality Statistics

Dr. Richard Rinehart, CIH, ScD, Epidemiologist, OSHA-Directorate of Construction, gave a presentation on crane fatality statistics in the construction industry from OSHA and the Bureau of Labor Statistics (BLS). OSHA and BLS statistics indicated the greatest number of crane-related fatalities occurred as a result of contact with objects. In the data he presented, electrocutions were the second greatest cause of crane-related fatalities. Other statistics reflected the number of fatalities relative to the activity of the victim, the type of industry, and the size of the employer. A copy of Dr. Rinehart's PowerPoint presentation will be distributed to C-DAC members.

Discussion of New Issues

C-DAC discussed several issues for the first time including Environmental Considerations and Site Conditions, Ground Conditions; Work Zone Control; Wire Rope; and Overhead and Gantry Cranes.

Environmental Considerations and Site Conditions, Ground Conditions

C-DAC members reviewed text from Section 1926.752(c) of Subpart R. The key issues discussed were: the party responsible for ground conditions, and the adequacy of certain measures that affect site and ground conditions.

Responsibility for ground conditions: C-DAC members discussed the Subpart R concept of the “controlling contractor” as the party responsible for providing adequate site conditions. Some Committee members stated that there has been a marked improvement since Subpart R became law. They added that crane operators do not have access, for example, to dirt moving equipment to create adequate ground conditions for the crane.

Other Committee members suggested that a crane operator could refuse to set up a crane if the site conditions are unsafe. In response, some C-DAC members noted that such a refusal could result in termination and no improvement in site conditions for a safer subsequent crane operation. In addition, a concern was raised regarding who the “controlling contractor” is in situations of multiple prime contractors. A Committee member will work with his constituents to develop a proposal for the situation of multiple primes.

Site access and ground conditions: C-DAC members discussed questions regarding what would be considered adequate and decided to add text to allow for the use of mats and cribbing to create adequate site conditions. The Committee noted that in some areas, such as wetlands or marshes, legal requirements might preclude draining a site. An additional issue that will require further discussion concerned sites for which construction site boundaries could not be clearly defined.

Underground voids: The Committee discussed the need for identification of known underground voids such as sewer lines, power lines, and abandoned dumps, and the transmission of such information.

Work Zone Control (access and egress)

C-DAC members discussed controlling access to crane work zones with some emphasis on protecting the area around traveling cranes and the potential hazards associated with the operation of multiple cranes within reach of each other.

Controlling access to crane work zone: C-DAC members discussed key hazards of working in the immediate vicinity of a crane, including load and pinch point

areas. The Committee discussed B 30 language that limits cab access to authorized individuals, and the barricading of the crane work zone around the outriggers and front bumpers to protect employees from pinch point, crushing, and struck-by hazards. Additional discussion is required concerning counter weights, including those in the air, which swing beyond the barricade. Possible solutions suggested included alarms and visual warnings, such as blinking lights or striped paint. Additional work zone control strategies discussed included pre-planning overhead hoisting for multiple cranes operating on a site and moving loads via pathways of least intermittent exposure.

Traveling cranes: C-DAC members discussed how to protect the area near a crane as it moves. Some members thought these situations posed less risk than when the crane is stationary because employees are less likely to approach a moving crane. The Committee discussed requiring a signal person to walk with a moving crane to deter employees from approaching hazardous areas.

Multiple crane activities: Committee members stated that collisions among multiple cranes in a work zone have been avoided through the use of radios, pre-planning meetings, and swing stops. Some C-DAC members raised concerns about cranes entering the site without notice and planning, which led to a suggestion to require pre-planning meetings for sites using multiple cranes.

Wire Rope

C-DAC members reviewed draft text for wire rope including general requirements, inspection, replacement, and maintenance. Committee members grappled with the question of the level of wire rope detail appropriate for the crane and derrick standards.

General Requirements: In cases where a crane or wire rope manufacturers' requirements are different from those set out in the standard, the employer will be required to comply with manufacturer specifications.

Inspection: C-DAC members decided to include wire rope inspection requirements in the Inspections Section of the standard and to include much of the detail provided in the draft wire rope text in a non-mandatory appendix. After some discussion, the Committee agreed to mirror for wire rope, the pre-shift, monthly, annual/periodic, and idle equipment crane inspection requirements. In addition, the Committee agreed that the qualifications of the

person doing the inspection of the wire rope would be the same as in the general inspection.

Pre-shift/Monthly inspections: C-DAC members discussed current practices of visually inspecting wire rope and raised concerns about requirements for pre-shift visual inspections of wire rope, which would require booming down. For jobs where, for a long period of time, the crane can not be boomed down, some suggested requiring new or like new wire rope at the start of the job. In addition, some stated that employees visually inspect wire rope for problems throughout a shift and check potential problems as they appear.

C-DAC members developed a list of deficiencies to inspect for on a pre-shift and monthly basis to reflect conditions that could be visually identified without booming down or partially disassembling the crane.

Annual/Periodic inspections: C-DAC members discussed a requirement to inspect all wire ropes, including those typically hidden or inaccessible for visual inspection during pre-shift inspections.

Written records: C-DAC members discussed who should be responsible for keeping written records of wire rope inspections. Some members were concerned that in rental situations, it is unclear whether the crane rental company or the renter is responsible for these records. OSHA explained that the entity that controls the detailed performance of the crane operator is the "employer" and therefore, it would be responsible for keeping these records. The Committee will work to clarify this concept and its application to rental situations in the regulation. C-DAC members decided that monthly wire rope inspection records shall be retained for three months. A Committee member suggested that an employer should only have to retain the records that it generates.

Wire Rope Replacement: C-DAC members discussed the time frame within which an employer would have to take action to replace a wire rope that showed signs of deficiency; the deficiencies that would necessitate a rope replacement; and the selection of, and in some instances, approval required for replacement of wire rope.

Action: The key issue discussed was the time frame for rope replacement once a deficiency has been identified. The Committee examined the current B30 standard which states that wire rope may be replaced at the end of the work shift

based upon the determination of a qualified person; but such replacement shall not occur later than the beginning of the next work shift.

Some C-DAC members stated that this was overly conservative given that wire rope tests have indicated significant additional life to a wire rope after it meets the deficiency criteria. They also stated that it takes time to order replacement ropes and that given the number of wire ropes required for a fleet of cranes and the cost of wire rope, it is not typical business practice to warehouse all the necessary wire ropes. Suggestions were made to allow time for ordering and receiving replacement ropes once a deficiency was identified, which lead to enforceability questions. However, some members expressed concern with changing manufacturer removal criteria. Other members expressed concern about allowing a deficient rope to be used at all after the deficiency was identified.

Criteria: C-DAC members discussed the draft list of deficiencies that would necessitate replacing wire rope. Committee members agreed to add an additional requirement that any wire rope that comes into contact with power lines must be replaced. In addition, the Committee discussed questions about different replacement criteria for rope running on non-steel sheaves and drums.

Selection: There was a debate about what approval would be necessary when selecting a wire rope replacement, which deviates from the original's size, grade, or construction. The options include the crane manufacturer, the wire rope manufacturer or an approval through the modifications section of the standard.

Some Committee members suggested that it could be difficult to get a timely approval for a wire rope from a crane manufacturer and stated that they currently rely on wire rope manufacturers. The Committee discussed the possibility of requiring approval from the crane manufacturer within a certain time frame, and then providing alternative requirements if the crane manufacturer did not respond within that time frame. C-DAC members also discussed the possibility of requiring crane manufacturer approval only for deviations in boom hoist ropes. Some Committee members will discuss this issue prior to the next meeting to develop a proposal.

Disposal: C-DAC members tentatively decided that it was not necessary to regulate disposal of deficient wire rope.

Maintenance: C-DAC members agreed to refer to manufacturer recommendations for wire rope maintenance.

Overhead & Gantry Cranes

C-DAC members discussed the unique characteristics of overhead and gantry cranes to determine if additional items need to be addressed in the crane standard. The Committee discussed the possibility of referring to the General Industry 1910 standard for these types of cranes. It will review the 1910 standard and examples of overhead and gantry crane inspection checklists used by industry. C-DAC members will consider whether or not to include hydraulic jacking systems in this standard after reviewing the 1910 standard. The Committee discussed the possibility of excluding hydraulic jacking systems if the industry creates a consensus standard.

Report on U.S. Department of Commerce/ASME Meeting

Russell B. Swanson, Director, Directorate of Construction, OSHA, reported on a meeting attended by the U.S. Department of Commerce (National Institute for Standards and Technology), OSHA, and the American Society of Mechanical Engineers (ASME), concerning ASME's desire that the Agency incorporate ASME B30 standards by reference rather than drafting regulatory language. He noted that OSHA does not plan to preclude the use of the B30 standards; however, he emphasized several points that might conflict with their incorporation by reference: 1) the Agency's focus on the user/employer; 2) the government's preference for use of plain language; 3) enforceability issues associated with B30's use of "should;" and 4) the government's interest in providing the public with easy access to regulations (requirements are set forth in the text, rather than incorporated by reference).

Public Comment

Lewis Williams of the North Carolina Department of Transportation (NC DOT) discussed crane operator qualifications; the use of personnel platforms that attach to boom tips; and the need to prevent employees from working under suspended loads. In addition, he stated that in NC, operator error and not equipment failure is the greatest cause of accidents.

Sean Grieve of PAT America, Inc., conducted a presentation on existing crane operator aids designed to increase efficiency and safety, such as anti-two block devices, load movement indicators, working area limiters, outrigger monitoring

systems and power line avoidance technologies. He also discussed possible future technologies.

Tom Chamberlain of Northrop Grumman-Newport News Shipbuilding stated that he is not aware of any wire rope-related accidents in any of the 600 cranes his company operates, and suggested that the Committee was getting too detailed in its wire rope requirements. He suggested that the standard simply refer to manufacturer requirements. In addition, he reiterated a request that a general industry representative be added to C-DAC because the Committee's decisions may ultimately affect general industry crane use.

Logistics

Meeting Dates/Locations: C-DAC will hold its January meeting in Las Vegas, at the Carpenters International Training Center, 6801 Placid Street, Las Vegas, NV. The meeting will begin at 1:00 pm on Monday, January 5th and conclude at 4:30 pm on Wednesday, January 7th. OSHA has reserved a room block for C-DAC members at the MGM Grand Hotel. Committee members should call the hotel at 1-877-313-5757 to confirm their rooms.

Next Steps

Documents: The November 5-7 meeting summary will be revised as discussed and distributed as final. The facilitators will draft the meeting summary for this meeting and distribute it prior to the January meeting.

Scheduling of additional issues: C-DAC members have scheduled discussions of the following additional issues to accommodate members of the public that want to be present for particular issues. Additional issues are likely to be discussed at these meetings as well.

January: Operating Near Power Lines and Safety devices related to power lines.

February: Verification criteria for the structural adequacy of crane components; Cranes on barges; and Safety devices (excluding those related to power lines).

Panels: OSHA is continuing to invite participants for panels on dedicated pile drivers and cranes on barges.

C-DAC Attendance - December 3-5, 2003

Present:

Stephen Brown, International Union of Operating Engineers
Michael Brunet, Manitowoc Cranes, Inc., Crane Manufacturers (AEM/CIMA)
Stephen P. Charman, Viacom Outdoor, Inc., Outdoor Advertising Association of America (OAAA)
Noah Connell, U.S. Department of Labor/OSHA
Peter Juhren, Morrow Equipment Company, L.L.C.
Bernie McGrew, Link-Belt Construction Equipment Co
Larry Means, Wire Rope Technical Board, ASME
Frank Migliaccio, International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers
Brian Murphy, Sundt Construction, Associated General Contractors (AGC)
George R. "Chip" Pocock, C.P. Buckner Steel Erection, Steel Erectors Association of America
David Ritchie, The St. Paul Companies, Training and Testing
Emmett Russell, International Union of Operating Engineers
William Smith, Maxim Crane Works
Darlaine Taylor, Century Steel Erectors, Co., Association of Union Constructors
Wallace Vega, III, Entergy Corporation, Inc.
William J. "Doc" Weaver, National Electrical Contractors Association, Inc.
Robert Weiss, Cranes Inc. and A.J. McNulty & Company, Inc., Allied Building Metal Industries
Doug Williams, Buckner Heavylift Cranes, Specialized Carriers and Rigging Association
Stephen Wiltshire, Turner Construction Company, Associated Builders and Contractors
Charles Yorio, Acordia
Susan Podziba, Facilitator, Susan Podziba & Associates
Alexis Gensberg, Facilitator, Susan Podziba & Associates

Absent:

Joseph Collins, Zachry Construction Corporation, American Road and Transportation Builders (ARTBA)
Dale Shoemaker, Carpenters International Training Center
Craig Steele, Schuck & Sons Construction Company, Inc., National Association of Home Builders (NAHB)