

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

Cranes and Derricks Negotiated Rulemaking Advisory Committee

Draft Meeting Summary - February 4-6, 2004

Agenda Review

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

Review and Approve January 5-7 Meeting Summary

C-DAC members reviewed the January 5-7 draft meeting summary and approved it as final with no changes. It will be available through the OSHA docket.

Structural Testing Verification Criteria

Panel: Hans-Dieter Willim, Chief Designer, Liebherr Werk Ehingen, and Craig Percy, Vice President, All Test and Inspection, Inc., described their procedures for structural testing to verify crane design calculations. Mr. Willim explained the verification requirements of the draft European standard prEN13000, which is performance-based relative to specific safety requirements, and does not specify the verification process manufacturers must use. He explained that currently, strain gauge testing is used, but not for all boom configurations. Mr. Percy discussed the All Test and Inspections verification process, which utilizes strain gauge testing as required under the U.S. Society of Automotive Engineers (SAE) standards. He stated that many prototype cranes fail strain gauge testing, despite computer calculations, in part because stress concentration areas can be difficult to predict. Mr. Percy mentioned that European manufacturers offer more boom configurations than American manufacturers, which makes it hard to test all of them.

Discussion: The key issue discussed was whether employers may use cranes verified under SAE standards exclusively or whether there are other standards, e.g. the European standard, which will ensure worker safety. Committee members agreed that the European draft standard is sufficient to meet safety requirements though some stated a continued preference for the SAE standards, which have historically ensured worker safety. The Committee agreed to include in the regulation a requirement to follow the SAE standard, the prEN13000 standard, or other standards that can prove a history of successful verification of design calculations.

Tower cranes are not currently manufactured in the U.S., and testing verification criteria for tower cranes comply with European DIN standards. Since there are no U.S. testing criteria standards for tower cranes, the Committee agreed to reference the appropriate DIN standard for tower crane verification requirements.

The C-DAC Derricks workgroup will consider appropriate verification standards for Derricks.

### **Discussion of Additional New Issues**

C-DAC discussed the following additional new issues: Free Fall/Power Down; Critical Lifts/Engineered Lifts; Tower Cranes; Operator Cab Criteria; and Signals (standard methods).

**Free Fall/Power Down:** Committee members discussed when to allow the use of free fall to lower the boom or load.

**Boom hoists:** C-DAC members discussed the dangers of using freefall to lower the boom hoist, and considered prohibiting its use. Since a number of older cranes do not have a power down function for the boom hoist, the Committee agreed to allow free fall for cranes built before the 1972 OSHA standard. The Committee also discussed allowing free fall of the boom hoist for cranes on barges, given that cranes may need to drop the boom quickly to compensate for unexpected high water conditions.

**Load hoists:** C-DAC members agreed that the use of free fall on load hoist lines is more typical for boom hoist lines. The Committee agreed to require power down (or prohibit free fall) when hoisting personnel or when a load is over a person or a power line.

**Critical Lifts/Engineered Lifts:** C-DAC members discussed the definition of "critical lifts" and possible requirements for such lifts. Ultimately, the Committee determined that critical lifts are defined differently depending upon a company's "usual" work. The Committee decided not to include the concept of critical lifts in the standard, but will require pre-planning for all lifts involving two or more cranes.

**Tower Cranes:** The Committee reviewed draft text for tower cranes, which included wind hazards related to signage; structural hazards related to erecting,

climbing, and dismantling; and additional inspection activities. The Committee decided to include tower cranes under all applicable sections of the standard and to include a separate tower cranes section for requirements that differ from the general crane requirements.

**Operator Cab Criteria:** C-DAC members reviewed requirements for operator cabs in the 1926.550 standard and in ASME B30.5, and discussed requirements for access to and exit from the operator cab, fire extinguishers, and additional issues.

Committee members discussed requirements for access to the operator cab, including steps and handholds. Given that many injuries result from operators falling as they jump from cranes, the Committee discussed the need to provide safe entry to and exit from the cab when the operator cannot access steps. C-DAC members decided to require that cranes manufactured after a certain future date must be equipped with handholds and steps for safe and easy access to and from the ground to the cab. For cranes built prior to enactment of the regulation, access points will be required to be maintained. Additionally, principal walking surfaces will be required to be skid-resistant.

The Committee discussed the large number of OSHA violations for missing fire extinguishers. After discussing the fact that the fire extinguisher in the cab may be the only one available on the job site, the Committee decided to require that a 10BC-rated fire extinguisher be located somewhere on the crane, but not necessarily in the cab.

In addition, the Committee agreed to maintain current requirements to prevent exhaust leaks, prohibit window distortion, use seatbelts for transit and travel, and provide locks for cab doors to prevent sudden opening or closing.

**Signals (standard methods):** C-DAC members discussed standardized voice signals and agreed to require that voice signals be given in the following order: function, direction, distance/speed, and stop. Examples of voice signals will be included in a non-mandatory appendix. In addition, the international hand signals chart will be included in the standard as a mandatory appendix.

### **Cranes on Barges Panel and Discussion**

Dan Wright of Piledrivers Local Union 2375 (Southern California), Dan Kuhs of Piledrivers Local Union 56 (New England), Mitch White of Manson Construction Company, James Pritchett of Crane Inspection Service, Inc., John Colletti of John

P. Colletti and Associates, and Steven Hebert of Global Industries discussed issues related to the use of cranes on barges. Don Wright and Dan Kuhs discussed the importance of securely tying down cranes on barges, providing proper matting, ensuring barges are capable of supporting a crane for the job it will perform, and reliable communication between crane operators and divers. Mitch White stated that in some cases tying cranes to barges or barricading around them is not possible, especially for small cranes working in designated areas on large barges. James Pritchett emphasized the need to certify inspectors for specific types of equipment and to require annual inspections by independent, licensed inspectors. John Colletti reviewed existing standards as they relate to cranes on barges and proposed new regulatory language for more stringent safety measures. Steven Hebert described the unique challenge of operating cranes on water, including unexpected swells, and recommended increased preventative maintenance on cranes.

After an initial discussion of cranes on barges, the Committee decided to form a work group to develop draft regulatory text for review by the Committee.

#### **Overhead and Gantry Cranes**

Tom Chamberlain of Northrop Grumman-Newport News Shipbuilding described the differences between the 1910 General Industry Standard and ASME B30.2/1926 Construction Standard regarding overhead and gantry cranes. Mr. Chamberlain recommended regulating overhead and gantry cranes used in construction under 1910, despite some additional stringencies in B30.2.

Although some aspects of the 1910 standard are less stringent than the 1926 standard, members were concerned that requiring two different standards would cause confusion when overhead and gantry cranes in general industry facilities are used for construction purposes. The Committee agreed in concept to reference the 1910 standard and to add provisions of the 1926 standard, if necessary, to address hazards specific to construction.

#### **Boom Tip Attached Personnel Baskets**

Dan Wolff, National Crane Corporation - Manitowoc Crane Group, discussed boom tip attached personnel baskets. He identified key hazards, including insufficient ground conditions, power lines, and the close proximity of structures. Mr. Wolff advised against lifting loads with personnel basket equipment, in part because the load could snag. The Committee considered a prohibition against lifting loads with personnel except for equipment specifically designed and manufactured with limited capacity jibs for tools and materials.

OSHA will research the aerial lift standard for additional information on the question of including specific requirements for boom tip attached personnel baskets.

### **Pile Drivers Panel and Discussion**

Pat Karinen of Piledrivers Local Union 34 (Northern California/ Nevada/ Utah), Dan Kuhs of Piledrivers Local Union 56 (New England), Ahti Knopp of Junttan and Pentti Heinonen, President of Junttan, discussed pile drivers.

Pat Karinen and Dan Kuhs discussed tip over hazards and lack of inspection requirements for dedicated piledrivers. They recommended that the Committee include pile drivers under the crane standard because they can move with a load, have many of the same parts including hoist lines and telescoping boom, and perform an activity that puts a lot of stress on the equipment. Ahti Knopp and Pentti Heinonen described the pile driving equipment their company manufactures and stated that the pile driver's leads have limited movement. They do not consider their equipment to be cranes, but they support inclusion of dedicated piledrivers under appropriate provisions of the crane standard.

C-DAC members discussed whether to include dedicated pile drivers under the standard. Some Committee members stated that pile drivers should be included because many of the functions and hazards are similar to cranes, and pile driver regulations are not likely to be revised in the foreseeable future. Other members were concerned that including pile drivers would cause the equipment to be incorrectly used as a crane and that many of the provisions in the standard would not apply to pile drivers. The Committee is considering the inclusion of dedicated pile drivers only for applicable and appropriate provisions of the crane standard.

### **Review of Draft Regulatory Text - §1408 "Signals - General Requirements"**

C-DAC members reviewed draft regulatory text for §1408 "Signals - General Requirements." After revisions related to the non-mandatory voice signal appendix, the Committee reached a tentative agreement on this section. Tentative agreements will not be reviewed again until the end of the negotiated rulemaking process, unless an agreed upon section is linked to another under discussion.

### **Public Comment**

James Pritchett of Crane Inspection Service, Inc., stated that crane operators should be tested on their equipment in the environment in which they will be

working, and that operators should be certified for particular equipment and functions. He also recommended that inspectors be independent and certified by the Department of Labor.

Tim Merrinar, National Institute for Occupational Safety and Health, stated that engineered critical lift plans should be developed by registered professional engineers for every critical lift.

Delynn Burkhalter, Burkhalter Rigging, stated that OSHA should reference other standards in addition to the SAE standard regarding structural testing verification criteria given that domestic crane companies are affiliated with non-U.S. manufacturers and because the current fleet of cranes, which are not tested according to SAE requirements, would otherwise be devalued.

Robert Wilson, Dockbuilders and Piledrivers Local Union 1456 (New York City), described the hazards associated with using cranes and pile drivers on barges and the need for better regulation of their use. He stated that welding track to barges is a key safety measure.

Louis Rioux, Dockbuilders and Piledrivers Local Union 1456 (New York City), stated that piledrivers should be included in the crane safety standard, that piledrivers needed better inspection requirements, and operators should have additional certification requirements for work on the water.

Dick Vourhes, Weeks Marine, Inc., stated that work on water should fall under marine regulations, not as an aside to land-based regulations. He also stated that the employer was often the most capable of having the specific knowledge needed to train employees.

Pat Karinen, Piledrivers Local Union 34 (Northern California/ Nevada/ Utah) stated that training specific to pile drivers is needed.

### **Logistics**

**Meeting Dates:** C-DAC will hold two meetings in March: Wednesday-Friday, March 3-5 and Monday-Wednesday, March 29-31. Meetings will begin at 8:30am each day.

**Meeting Locations:** The March meetings will be held in Washington, DC. The May meeting, originally planned for Chicago, will likely be held in San Antonio.

C-DAC members will be notified when the location of the May meeting is confirmed.

**Next Steps**

**Documents:** The January 5-7 meeting summary will be revised and distributed as final. The facilitators will draft the meeting summary for this meeting and distribute it prior to the March 3-5 meeting.

**Derricks work group:** will be established to assist OSHA in developing draft regulatory text for the derricks section of the standard.

**Cranes on barges work group:** will be established to assist OSHA in developing draft regulatory text for the cranes on barges section of the standard.

**Schedule of remaining new issues:** C-DAC has discussed all issues of the standard at least once, with the exception of Safety Devices/Operational Aids (other than those used near Power Lines), which will be discussed at the March 3-5 meeting; and Limited requirements for cranes with a rated capacity of 2000 pounds or less, which will be discussed at the March 29-31 meeting.

**Agenda for Future Meetings:** For the remainder of its meetings, C-DAC will review and revise draft regulatory text with the goal of reaching tentative agreements on each section of the standard. Once tentative agreements are reached on all sections, or as many sections as possible, they will be reviewed prior to reaching any final consensus.

## C-DAC Attendance - February 4-6, 2004

### **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)  
Joseph Collins, Zachry Construction Corporation, American Road and Transportation Builders (ARTBA)  
Noah Connell, U.S. Department of Labor/OSHA  
Peter Juhren, Morrow Equipment Company, L.L.C.  
Bernie McGrew, Link-Belt Construction Equipment Co  
Frank Migliaccio, International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers  
Larry Means, Wire Rope Technical Board, ASME  
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  
Dale Shoemaker, Carpenters International Training Center  
William Smith, Maxim Crane Works  
Craig Steele, Schuck & Sons Construction Company, Inc., National Association of Home Builders (NAHB)  
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  
Susan Podziba, Facilitator, Susan Podziba & Associates  
Alexis Gensberg, Facilitator, Susan Podziba & Associates

### **Absent:**

Darlaine Taylor, Century Steel Erectors, Co., Association of Union Constructors  
Charles Yorio, Acordia