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

Cranes and Derricks Negotiated Rulemaking Advisory Committee

Draft Meeting Summary – November 5-7, 2003

Agenda Review
C-DAC members reviewed and accepted the November meeting agenda.

Review and Approve October 1-3 Meeting Summary
C-DAC members reviewed the October 1-3 draft meeting summary and made editorial changes. It was approved as final and will be available through the OSHA docket.

New Committee Member
B.H. Zettler of OSHA introduced new C-DAC committee member, Mr. Wallace Vega, III, Director of Utility Group Safety, Entergy Corporation, Inc., who will represent the interests of the electric power distribution line owners.

Panel on Drill Rigs
Members of the ADSC: International Association of Foundation Drilling provided C-DAC with a panel presentation on the characteristics and hazards associated with "drill rigs," equipment designed for drilling shafts. Presenting were: S. Scot Litke, Executive Director of ADSC: International Association of Foundation Drilling; William Maher, Vice President of McKinney Drilling Company; Thomas Myers, Chairman of ADSC Drill Rig Safety Task Force, President of Davey Drill Division, Davey Kent, Inc.; and Richard Marshall, ADSC Safety Director, Safety Director of Richard Goettle, Inc. The panelists recommended against including "drill rigs" in the standard because of their limited horizontal movement, radius, and hoisting capabilities, the lack of applicable load charts, and because they are designed to function as excavating equipment, not hoisting equipment. In addition, the panel is concerned that the equipment's inclusion in Subpart N would encourage inappropriate use of drill rigs.

Review of Draft Regulatory Text
C-DAC members reviewed the draft regulatory text, some of which reflected discussions of the October 1-3 meeting and its October 20 conference call. Draft text discussed included scope; assembly and disassembly; operation procedures; authority to stop operation; and inspections.

§1400 Scope: C-DAC members discussed whether to include drilling rigs under the standard. Some members want to exclude drill rigs because of their limited horizontal movement and hoisting capacity (they have no load chart) and because inclusion in the "crane regs" could lead to increased use of drill rigs for

hoisting. Others thought drill rigs should be included because they may be used for hoisting. It was also suggested that they might be included for the purpose of prohibiting their use as cranes beyond manufacturer's specifications. The Committee deferred its decision on inclusion or exclusion of drill rigs pending a full discussion of similar equipment such as dedicated pile drivers.

§1410 – 14XX Assembly and Disassembly: The key issues discussed included crew instructions; crane movements; working under the boom; addressing specific hazards; secondary braking devices; components and configuration; manufacturer prohibitions; additional requirements for assembly/disassembly of booms and jibs; and employer procedures.

Crew instructions: C-DAC members discussed whether the competent-qualified person should instruct all assembly/disassembly crewmembers on all related hazards or only those associated with each crewmember's specific tasks. Most members supported a pre-shift meeting to identify assembly/ disassembly hazards as well as instruction on specific hazards. The draft regulatory text will be modified to address the concern that tasks may change and crewmembers may be added during crane assembly or disassembly.

Unexpected crane movements: C-DAC members discussed the need for crane operators to warn employees prior to crane movements when neither the crane operator nor the signal person can see where they are. C-DAC members discussed what an operator is required to do before making an unexpected crane movement. It was decided that the operator will sound a warning before making a movement when s/he has been notified that an employee is or will be in the cab, or behind, on, or under the crane. C-DAC also considered who should be responsible for signaling the operator – a signal person or the actual employee in the dangerous position.

Working under the boom: C-DAC members agreed to restrict employees from working under the boom except when necessary to remove boom connection pins for in-the-air assembly operations. C-DAC will address the meaning of "in-the-air assembly".

Addressing specific hazards: This section lists the hazards that competent and qualified persons must address for assembly and disassembly operations. Key hazards discussed included: site and ground bearing conditions, calculating assist crane loads, lattice boom and jib pick points, center of gravity, snagging, stability upon pin release, loss of backward stability, wind velocity, capacity limits, secondary braking devices, and components and configurations. Except as noted below, C-DAC reviewed the draft regulatory text on the topics set forth above, with few or no changes.

Site and Ground Bearing Conditions: C-DAC members discussed what adequate site and ground bearing conditions are, and the section on sites in Subpart R, which requires the controlling contractor to ensure adequate access roads.

Secondary Braking Device: C-DAC members discussed the use of a secondary boom hoist brake to avoid a crushing hazard when the boom is stationary. Some members expressed concern about the secondary brake interfering with assembly, for example, when lining up components prior to inserting pins. To minimize this concern, draft regulatory text was modified so that secondary brake activation is limited to those times when the boom is being held for an extended period of time.

Components and Configuration: C-DAC members agreed that when manufacturer's specifications for equipment configuration are not available, registered professional engineers should be required to document their approval of the equipment configuration. C-DAC discussed the Paperwork Reduction Act as a possible impediment to requiring documentation.

§1411 Assembly/Disassembly -- Employer Procedures – General Requirements: C-DAC members suggested that it was not necessary to document those employer procedures for assembly / disassembly that are developed by a qualified person and differ from manufacturer specifications.

§14XX Assembly/Disassembly -- Employer Procedures – Additional Requirements for operations in the air: C-DAC members agreed to remove this section as all elements of it are covered in §1411 General Requirements.

§1412 Operation – Procedures: C-DAC members agreed that when manufacturer procedures are unavailable, a qualified person shall create procedures for operational controls, such as levers, switches, and pedals.

In addition, hazard warnings concerning electrical power lines will be required on all sides of the crane and in the cab in view of the operator. It was agreed that the section on "Postings" will be moved to the power line provisions.

§14XX Authority to stop operation: C-DAC members discussed operator authority to stop operation if a safety hazard exists. The key outstanding issue concerns who has the authority to determine when safety has been assured so that crane operations can resume. Concerns were raised regarding the potential for disputes between an operator and a qualified person over the continued existence of a safety hazard.

§14XX Inspections: C-DAC members reviewed draft regulatory text for inspections. The key issues discussed included inspection of new, modified, and repaired equipment; post-assembly inspections; pre-shift inspections; monthly

inspections; annual/periodic inspections; and inspection of equipment not in regular use.

Inspection of new, modified, and repaired equipment: C-DAC members discussed the need to inspect and test equipment only after major adjustments and major repairs. C-DAC members suggested using B30.5-2000 as a resource for defining and giving examples of adjustments and repairs.

Post-assembly inspections: A qualified person will perform post assembly inspections.

Pre-shift inspections: The pre-shift inspection is performed by a competent person and is designed to identify equipment deficiencies through observation, and disassembly or removal of parts will not be required. C-DAC members reviewed and revised the minimum list of elements that comprise the pre-shift inspection.

Monthly inspections: The monthly inspection is a documented pre-shift inspection conducted by a competent person once per month. It was agreed that such documentation will include the name of the person performing the inspection to increase accountability, but will not require a signature, to avoid the potential problem of refusal to sign. C-DAC members agreed that documentation for this inspection would be retained for three months.

Annual/periodic inspections: Annual inspections will be performed and documented at least every 12 months by a qualified person. The inspection report will include a list of any deficiencies found, corrective actions taken, and the date corrective action is completed. Only the most recent report will be required to be kept on file. C-DAC members discussed the advantages and disadvantages of internal and independent inspectors.

After a review of the elements to be inspected during the annual/periodic inspection, C-DAC members discussed adding numerous other items including windows, horns, heater, proper ventilation, electrical components and wiring, mirrors, fire extinguishers, back up alarms, pumps and motors, hydraulic and pneumatic valves, wear pads/ slider pads, outrigger pads/floats, operator's seat, steps and ladders, handrails, guards, and decals. This list will be reviewed to ensure that the annual/periodic inspection focuses on those elements that will ensure worker safety.

Heavy Service: C-DAC members considered more frequent inspections for heavy service, but most stated that cranes are built specifically for uses such as operating at load capacity or number of lift cycles per hour. Some Committee members proposed deleting this section because they expect problems due to heavy use will be identified in the pre-shift, monthly, and annual/periodic inspections.

Severe Service: C-DAC members discussed cracks and excessive wear in structural components that could be caused by use in extreme temperatures or in a corrosive environment. Some members suggested including cracks and corrosion in the elements of the pre-shift inspection.

Inspection of equipment not in regular use: The first inspection after equipment has been idle for more than 1 month, but less than 6 months will be the monthly inspection to ensure that employers have up-to-date documented monthly inspection reports on the crane. Except as noted, monthly inspections will not be required for idled equipment. C-DAC members deleted the provision on stand-by cranes from the draft regulatory text.

Discussion of New Issues

C-DAC discussed numerous issues for the first time including hoisting personnel, maintenance and repair qualifications, fall protection, guarding, and work zone control.

Hoisting Personnel: C-DAC members reviewed §1926.550(g), the existing regulations for suspended personnel platforms used on cranes and derricks. The key issues discussed included shut-down and two-blocking devices; wind conditions; attachments to boom; travel while hoisting personnel; non-locking hooks; pre-shift trials and meetings; and suspension of loads.

Automatic shut-down and two-blocking devices: C-DAC members discussed requiring automatic shut-down and two-blocking devices when hoisting personnel. Some Committee members were concerned that free fall could occur on friction cranes, and therefore, discussed requiring automatic shutdown devices on all cranes, including retrofitting older models. Some felt that there was not enough information about this hazard to require retrofitting. OSHA will try to locate its letter of interpretation regarding freefall prohibition.

Wind conditions: C-DAC members agreed to regulate maximum wind speeds for hoisting personnel and agreed that personnel platforms should not be used in winds in excess of 20mph.

Attachments to boom: C-DAC members discussed the use of personnel platforms or baskets attached directly to the boom, which are not currently regulated. The Committee is considering whether or not to regulate their use. Some Committee members are concerned that such platforms allow no flexibility of movement, are often out of the operator's view, and make it harder to lower and exit personnel in an emergency. Others recognized their frequent use and the ease with which they can be mounted on the end of a boom. The Committee will continue discussion of this issue at a future meeting.

Travel while hoisting personnel: C-DAC members discussed the conditions under which to allow cranes to travel with personnel platforms. C-DAC considered restricting movement to "crawler" cranes. The Committee decided to revisit the current regulations, which allow tire cranes to travel while hoisting personnel in some circumstances and requires trial runs immediately prior to hoisting personnel while traveling.

Non-locking hooks: C-DAC members discussed whether spring-loaded hooks could be used with a master link in hoisting personnel, and whether a personnel basket with a master link could potentially fall out of a spring-loaded hook. The Committee decided to clarify that either a locking hook or a shackle must always be used when hoisting personnel.

Pre-shift trials and meetings: Trial lifts of personnel platforms should occur prior to each shift, whenever the crane is moved to a new position, and when the crane will travel while hoisting personnel. In addition, most Committee members supported requiring pre-shift meetings to discuss anticipated personnel lifts.

Suspension of loads: C-DAC members agreed that loads should not be attached to or suspended from personnel platforms. In addition, the personnel platform itself should generally not be used to hoist materials. Ultimately, C-DAC members decided that the current regulation was sufficient.

Maintenance and Repair Qualifications: C-DAC members reviewed the section on maintenance and repair worker qualifications in the Draft Crane Work Group Report. The Committee discussed a requirement that the employer ensure that maintenance and repairs are done by a "qualified person," who is qualified to work on the particular type of equipment and to perform the particular task. Committee members agreed that "qualified persons" may include those who learn on the job.

Fall protection: C-DAC members identified key slipping and fall hazards such as ladders, steps, non-skid surfaces used for access to the operator station, and harnesses and lanyards that can get tangled. They also stated that slipping and falling hazards are most likely to occur when moving on the top of booms, going up gantries, during the assembly / disassembly of gantries on luffers, and while getting in and out of cabs. Some Committee members thought the fall protection regulations should not apply to assembly / disassembly because crew members normally do not typically tie off during these processes.

The Committee discussed writing new regulations to allow for catwalks on booms. OSHA will review European DIN standards regarding the use of catwalks. Some members commented that adding catwalks could increase the weight of the boom and therefore, reduce capacity. The Committee also

discussed fall protection anchors and questioned whether they might be required for new equipment only.

Guarding: C-DAC members discussed and will review current regulations and AMSE standards for maximum opening size for guards, weight-bearing capacity, and other specifications.

Work Zone Control: C-DAC members agreed to rename this section in order to avoid confusion with road construction issues. One suggestion was "critical work area." The key associated hazards are being struck and crushing. The Committee discussed the use of barriers mounted on outriggers to prevent people from entering the work zone. Supporters of mounted barriers stated that this is an easy way to prevent accidents, potentially including the risk of electrocution of people standing near cranes. In situations where the mounted barriers cannot be used, for example, because of a tight work space, a signal person could be required to warn personnel of hazards. Some Committee members stated that the barriers do not protect against a crushing hazard from counter weights, which often swing beyond the barrier perimeter.

Questions remain regarding whether the signal person would only watch the pinch points; who is responsible if an employee violates the barricade; and situations when barricading is impractical or impossible.

Public Comment

Larry Brumbaugh of Hunt Construction stated that the user, not the general contractor, should be responsible for site and ground conditions, given that general contractors rely on an operator's judgment to determine appropriate site and ground bearing conditions. He also suggested a written work plan and measurable, enforceable documentation.

Jim Brown of AGC Indiana said that it would not be reasonable for the Department of Labor to define "adequate" as it applies to site and ground bearing conditions and also felt that the user should bear responsibility for site conditions. He suggested inclusion of an appendix in the regulations to help crane users decide the adequacy of site conditions.

Lewis Williams of the North Carolina Department of Transportation (NC DOT) spoke about a range of issues including the scarcity of qualified persons in small companies and NC DOT; the need for Subpart N terminology to be parallel to Subpart R to reduce confusion; the benefits of in-house mechanics rather than third parties for annual inspections; the usefulness of man-baskets pinned directly to the boom; and the need to write a standard that will not deter future innovation.

Hugh Pratt of Insulatus, Inc., discussed operator training practices in the United Kingdom and distributed copies of a British crane operators' manual.

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. This meeting will start at 1:00pm on Monday, January 5th and end at 4:30pm on Wednesday, January 7th. Lodging information will be provided prior to the meeting.

Next Steps

Documents: The October 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 December 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.

December: Wire Rope; Environmental Considerations & Site Conditions, Ground Conditions; Work Zone Control (access & egress); Overhead & Gantry Cranes; Hoisting Personnel (if experts are available to attend).

January: Operating Near Power Lines

February: Verification criteria for the structural adequacy of crane components; Cranes on barges

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

Conference Call on Assembly of Crane Attachments: To be held on Monday, November 17, 1:00 - 3:00pm EST. The call-in number information will be emailed to C-DAC members prior to the call.

C-DAC Attendance – November 5-7, 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)
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
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
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
Charles Yorio, Acordia
Susan Podziba, Facilitator, Susan Podziba & Associates
Alexis Gensberg, Facilitator, Susan Podziba & Associates

Absent:
Darlaine Taylor, Century Steel Erectors, Co., Association of Union Constructors